

Applied Energy Systems

PEMS' Applied Energy Systems are specifically designed to address customers' energy requirements. Our monitoring and control systems help optimize energy consumption and, in turn, reduce operating costs and contribute to a company's bottom line.

Energy Monitoring Systems

PEMS Monitoring Systems provide complete and accurate energy information that is essential for improving energy productivity. Analyzing this information empowers industrial customers to make good decisions about controlling energy costs. Monitoring system options include:

Load Profiling – Measures and records energy use for every demand interval, from distributed power monitors and other energy meters, and stores that information in a central database. By tracking energy consumption patterns over time, a facility can use historical data to verify electric bills, negotiate a better rate structure and identify opportunities for demand management. *Typical savings: 3% to 10% of energy consumption.*

Internal Cost Allocation – Provides accurate internal billing to correlate energy costs with production. Costs can be allocated to a department, process or facility, providing department heads with the incentive to reduce energy costs in their area(s) of responsibility. *Typical savings: 3% to 10% of energy consumption.*

Distribution System Monitoring – Provides a centralized view of an entire facility's power distribution system. Engineers can identify equipment that might be approaching failure (e.g., alarming on near overheat or overload conditions) and, as a result, reconfigure electrical system topology (e.g., open or close breakers via an operator terminal) and manually limit demand by shedding loads or increasing generator output. *Typical savings: System often pays for itself by preventing one or two power outages.*

Power Quality Monitoring – Centralizes power quality data from distributed power monitors. The system senses voltage excursions, momentary power losses, phase reversals and harmonics; and communicates this information in the form of instantaneous displays, trends, reports and alarms. Power quality data can be used to pinpoint the cause of failures of motors, drives and sensitive equipment; negotiate better service from the utility; and identify the need for power factor correction, harmonic filters and other corrective devices. *Typical savings: Prolonged equipment life and reduced maintenance costs.*

Rockwell Automation

Global Manufacturing Solutions

Energy Control Systems

After analysis, PEMS will design, build and install automated systems to capture energy savings. PEMS' custom control systems match specific customer requirements to manage critical loads and avoid production interference. Control system options include:

Demand Management & Load Curtailment – Automatically projects future demand to ensure the peak limit is not exceeded. The system controls demand charges by shedding, trimming and (or) interlocking loads; or shifting them to less costly time periods. It also prioritizes loads to allow operators to set the order in which loads should be shed and restored. *Typical savings: 5% to 25% of energy consumption.*

Emergency Load Shedding – Reduces the total plant load automatically to keep key plant processes operating on limited capacity in the event of utility or generator loss. The system quickly trips breakers to maintain electrical system stability. *Typical savings: System often pays for itself by preventing one or two power outages.*

Power Factor & Harmonic Control – Automatically reduces harmonics and improves power factor. The system reduces reactive power charges, improves voltage regulation, minimizes damaging harmonics and reduces nuisance trips caused by poor power quality. *Typical savings: 2-6% of energy consumption in addition to prolonged equipment life and reduced maintenance.*

Generator Control – Provides integrated power generation control, such as starting, stopping and synchronization of generators. The system improves generator utilization including power output and heat recovery, reduces peak demand charges, maintains production during load curtailment or blackout periods and reduces maintenance costs. *Typical savings: 3-10% of energy consumption.*

Advanced Power System Control – Automatically controls power system equipment to improve overall system operation. The system controls load tap changers and voltage regulators, and coordinates protective devices. *Typical savings: Prolonged equipment life and reduced maintenance costs.*

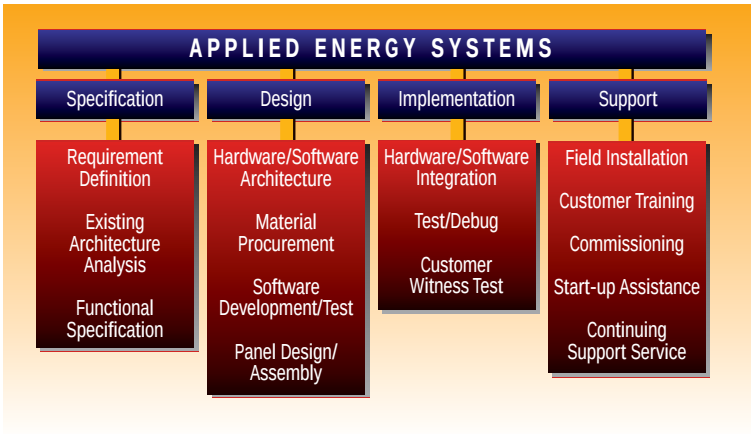
Why choose a PEMS System?

PEMS' Applied Energy Systems offer the functionality necessary to manage and reduce energy costs. Our turnkey system development process insures that nothing gets overlooked from specification and design through implementation and support. This includes:

- Quality Hardware and Software procurement, integration and testing.
- Open-system communication networks and protocols including utilizing existing networks.
- Experience in energy systems design and implementation.
- Incremental future expansion without obsoleting the initial system.
- Experience in managing large and small projects to meet schedule deadlines.
- Comprehensive system documentation package that allows the end user to assume system ownership.

The result – increased efficiency and aggressive payback on investment.

Energy-related costs are controllable and no longer " just the cost of doing business". Companies that efficiently manage their energy costs will have a competitive advantage. It is critical to take control of the future by investing in the appropriate energy management system.



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