

AI Driven Energy Management for Industrial Applications

Maximize *Energy Efficiency* and Improve *Electrical Reliability*

Application Guide

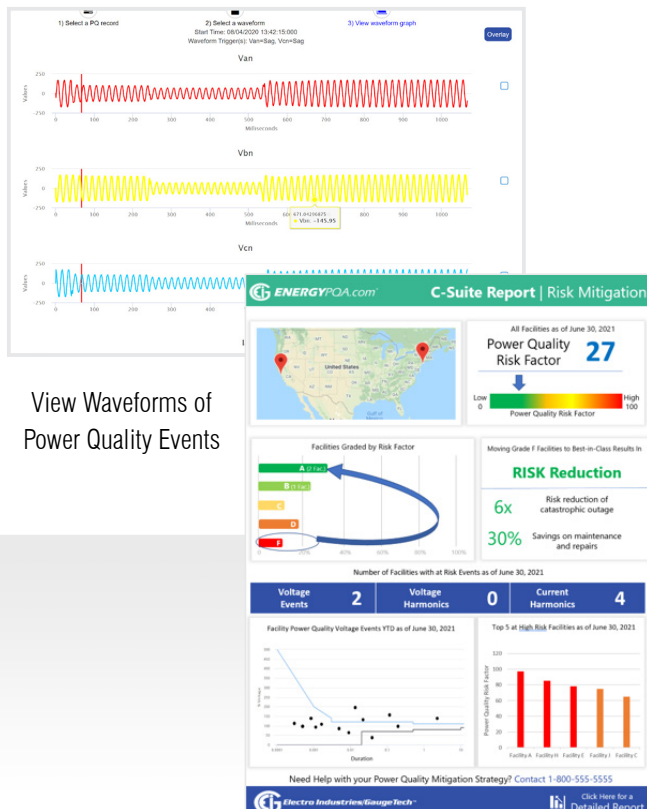


- Identify the Least Reliable Facilities and Circuits to Improve Power Quality
- Respond Proactively to Power Quality Events Before They Become Critical
- Identify the Most Energy Wasteful Facilities and Circuits to Maximize Energy Efficiency Improvements
- Reduce Costs with AI-based Predictions
- Manage All Commodity Usage

Identify the Least Reliable Facilities and Circuits to Improve Power Quality

An essential aspect of industrial energy reliability is power quality. Power quality events can cause damage to factory equipment, downtime, safety issues, and lost productivity and revenue. An estimated 20-40% of downtime is power quality related and 80% of power quality issues originate within facilities. Prevent downtime by identifying the highest risk facilities and circuits with the worst power quality using EIG's AI driven EnergyPQA.com® cloud-based energy management system and power quality meters. The EnergyPQA.com® system gives deep insights into power quality in all metered areas of the factory.

- View dashboards showing voltage power quality, voltage and current faults, THD, waveform recordings, and power factor, including CBEMA and SEMI F47 graphs.
- Automatically grade facilities on best-to-worst power quality risk.
- Identify specific circuits in the worst facilities to provide simple meaningful actions that improve reliability and safety of the power system.



View Waveforms of Power Quality Events

View Power Quality Risk Factors for All Facilities

Respond Proactively to Power Quality Problems Before They Become Critical

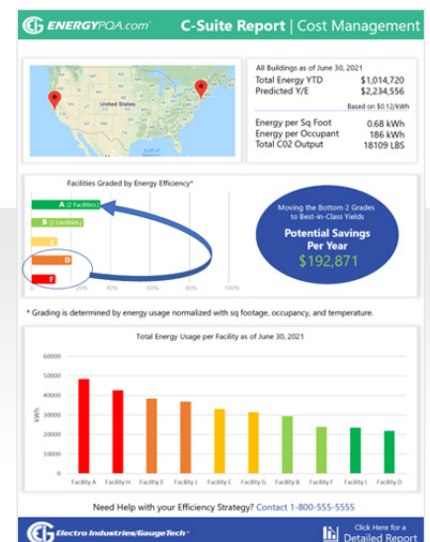
EIG's power quality meters and EnergyPQA.com® energy management system send email alerts for programmed alarm limits and for all power quality events.

- Send email alerts to multiple recipients.
- Emails contain a link to the event details in the EnergyPQA.com® system.
- Take remedial action before problems have escalated to the point of power or equipment failure.

Identify Wasteful Facilities and Circuits to Improve Energy Efficiency

According to the U.S Department of Energy, factories and industrial plants account for a third of U.S. energy use and 20% of that usage can be saved by reducing energy waste. Energy efficient facilities can consume up to 85% less power. The EnergyPQA.com® energy management system transforms traditional energy management by identifying the most energy wasteful facilities and circuits to maximize energy efficiency improvements.

- Automatically grade facilities and circuits for energy efficiency using smart analytics.
- Identify potential savings by improving least efficient facilities and circuits.
- Focus on facility circuits most in need of improvement.

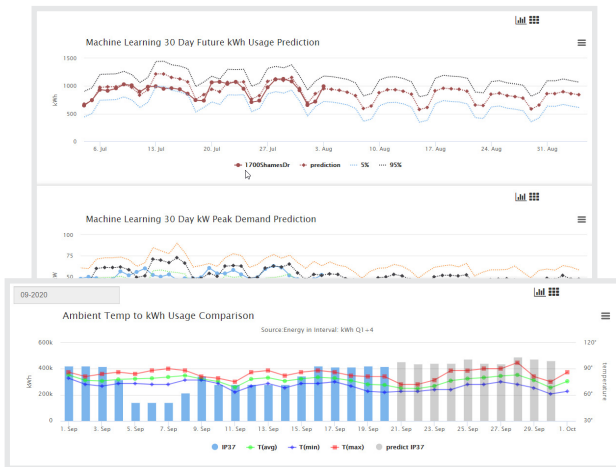


View Facility and Circuit Grading with Potential Cost Savings

Reduce Costs with AI-based Predictions

Use the EnergyPQA.com® energy management system's AI-based energy predictions to provide insights into factory energy trends into the future. By looking at future predictions, a facility manager can then be proactive to make sure that energy reduction programs are successful. The system uses historical energy readings and future weather forecasts to provide usage and demand before they occur.

- Accurately predict demand and energy usage into the future with advanced AI and machine learning.
- Take action on peak demand predictions in advance of penalty.
- View energy dashboards that detail energy usage and demand across factory areas and provide insightful predictive analysis.

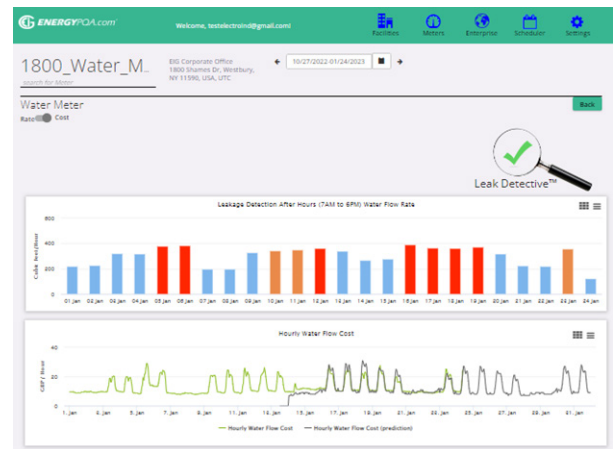


Use Artificial Intelligence to Predict Energy Usage into the Future

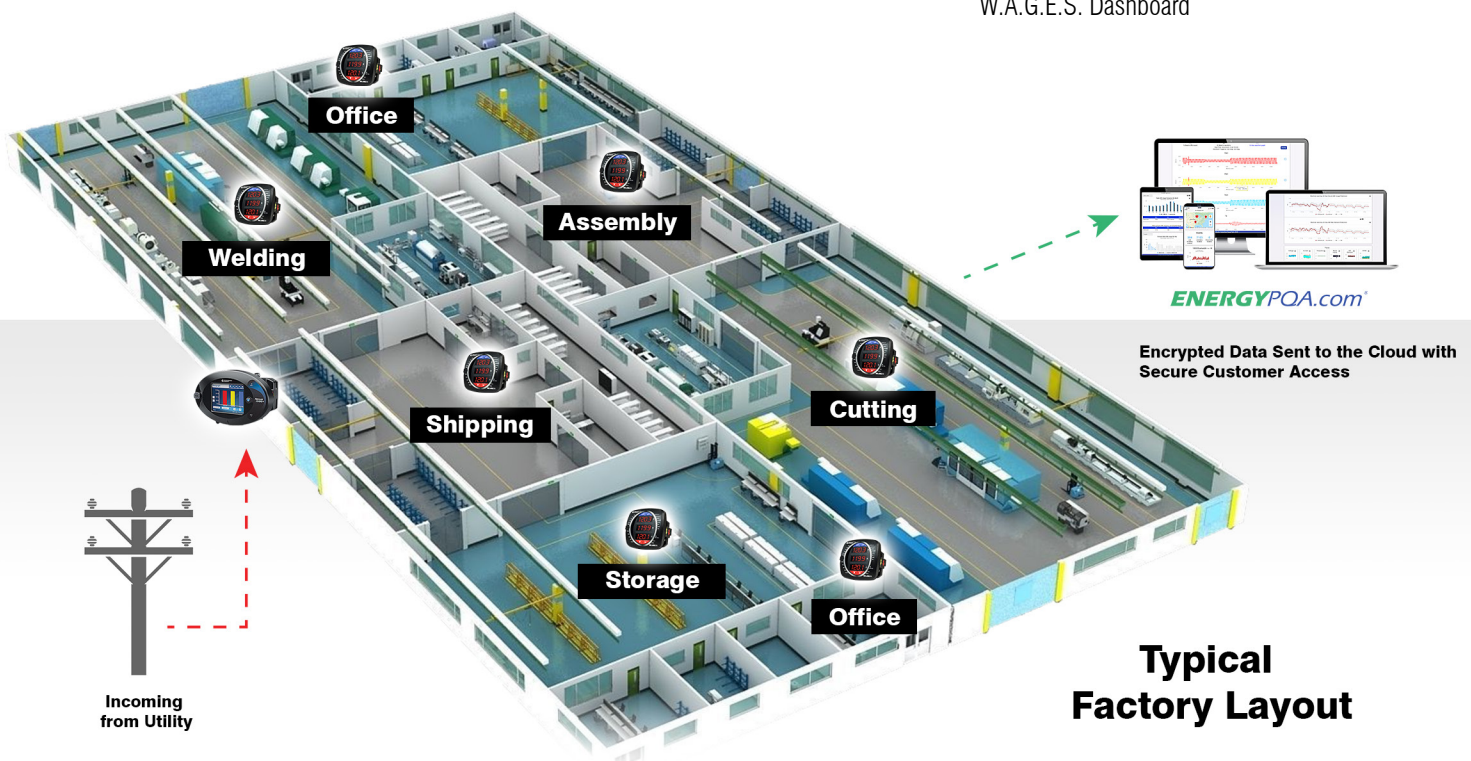
The system emails notifications of new predicted peak demand up to three days in advance. Since demand charges can be as high as 50% of a factory's actual energy bill, this information can yield significant savings. Use the EnergyPQA.com® energy management system's predictive energy usage dashboards to determine the success of demand mitigation efforts.

Manage All Commodity Usage

The EnergyPQA.com® system allows you to track all commodity usage in one place, eliminating the need for discrete systems for water, air, gas, electric, and steam (W.A.G.E.S.) usage. View detailed usage and commodity cost dashboards. Trend commodity usage within a building and compare use between factory buildings. With the unique Leak Detective™ feature, be alerted to air and water leaks, allowing timely action to save resources and money. Generate reports for all W.A.G.E.S. commodity usage.



W.A.G.E.S. Dashboard



Typical
Factory Layout

Typical Bill of Materials

Cloud-Based Energy Management Solution

EnergyPQA.com® - AI Driven Energy Management System, providing energy analytics and predictions, reducing costs, and improving power system reliability

Ordering Part #: **ENERGYPQA-1Y**

Learn More: <https://www.electroind.com/products/energypqa-com-energy-management-system/>



Critical Load Point

Nexus® 1500+ - Advanced Power Quality Meter

Example Installation: Utility Entry Points, Critical Loads, High Power Sensitivity Points

Ordering Part #: **Nexus1500+-D2-60-20-V3-X-X-X-X**

Learn More:

<https://www.electroind.com/products/nexus-1500-power-quality-meter-with-phasor-measurement-unit/>



Large Loads (400 A or more)

Shark® 250 - Cyber Secure Power and Energy Meter

Example Installation: Typical Building Loads, Substations, Control Panels

Ordering Part #: **Shark250-60-10-V2-D2-INP100S-X-X**

Learn More: <https://www.electroind.com/products/shark-250-power-meter/>



Smaller Loads (200 A or less, high-density)

MP200™ Multipoint Metering System - 8 Three Phase Input Meters

Example Installation: Smaller Panel Boards, High-density Circuits

Ordering Part #: **MP200-Y-60-10-V2-WIFI-MDSN**

Learn More: <https://www.electroind.com/products/shark-mp200-multi-point-energy-meter/>



Engineering Services

Contact EIG's highly experienced engineers, with a variety of skills in the fields of electrical engineering, software engineering, and meter engineering, to assist in the design, commissioning, start-up verification, and certification of installations. Our team will help you get your project up and running, and ensure its success.



Contact EIG at:

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Application page link:

www.electroind.com/energy-management-for-industrials/

