The EnergyPQA.com™ system is a Next Generation Energy Management Cloud solution. It surpasses traditional Energy Management systems by adding AI-based Energy Prediction Engines and giving deep insight into power quality.

The system predicts usage trends into the future, allowing users to proactively reduce demand and save on energy costs. It also provides deep insights into power quality to increase Enterprise power reliability.

**EnergyPQA.com™ System Features:**

- Energy Usage Analysis and Comparisons Across Facilities
- Predictive AI Analytics to Proactively Reduce Demand and Usage
- Deep Power Quality Insights and Reporting
- Energy Usage Billing with Cost Allocation, Tenant Billing, and Energy Reports
- Advanced Security and Data Integrity
Reduce Electrical Energy Costs using Enterprise Energy Analysis

The EnergyPQA.com™ solution offers an innovative approach to energy management by letting users compare and predict energy usage across facilities. The system reports on highest energy usage and on highest peak demand contributors to easily pinpoint problem areas and energy inefficiency. By quickly identifying poorly performing buildings and implementing energy conservation, facility managers can significantly improve energy efficiency and reduce power consumption.

The EnergyPQA.com™ usage dashboards also show differences in energy usage and demand throughout different parts of a facility. This allows proper submetering and energy awareness programs to be implemented. Up to 15% savings can be realized through these types of programs. The information shown drives behavior and changes an energy user’s mindset by showing actual usage versus square footage-based estimated costs. Providing actual usage information to users promotes sustained energy conservation behavior.

Uniquely, the EnergyPQA.com™ system also provides predictive analytics. Using AI algorithms, a facility manager can make preemptive changes within a facility based on the system predictions, which give the ability to make energy savings changes prior to the costs being incurred.
Predictive AI Analytics Help Manage Demand and Usage

Reduce Demand Penalties with Predicted New Peak Demand Alarms

The EnergyPQA.com™ system uses Artificial Intelligence and Machine Learning to predict energy usage and demand into the future. In addition, the system can issue alarms on a new predicted peak demand three days prior to the event occurring. This allows facility managers to enact preemptive demand reduction, to save on avoidable demand penalty charges.

View Future Energy Usage to Justify Load Curtailment Initiatives

The system provides predictions of system-wide yearly usage. With this information, a user can assess savings opportunities by implementing load curtailment programs and ascertaining their effectiveness during the year. By looking at future predictions, new initiatives can be adjusted proactively. This ensures that implemented plans will be successful.

Use Advanced AI Modeling Tools to Provide More Accurate Energy Usage Predictions

The EnergyPQA.com™ system uses an advanced AI data science model. This model uses inputs including present data, past data, weather patterns, and future forecasts to improve the accuracy of its predictions. The system is self-learning, so that it improves its load predictions over time. With AI, the effectiveness of any energy conservation programs can be ascertained proactively.
**Predictive Demand and Event-based Alarms**

- Determining new peak demands in advance of an actual demand charge allows for meaningful decisions that can proactively reduce demand penalties.
- Conduct demand response or adjust electrical usage for the energy system on that specific day to reduce the penalty.
- Compare previous years for demand and usage and determine if the adjustment will result in meaningful cost savings.
- Set alarms for other events, such as limits, waveform captures, and tampering.

**Custom report attributes include:**

- Titles
- Simple formulas
- Complex formulas
- Summation and averaging
- Date and time of max reading
- Bar and line charts
- Real time report preview
- Standard spreadsheet editing format

**Customizable Report Generator**

The EnergyPQA.com™ system has the ability to generate custom reports on an Enterprise-wide basis. Almost any desired customized report is available. Reports can be emailed on a scheduled basis for daily, weekly, monthly, or most other time schedules.

There are standard report templates available to make set up easy and quick. Standard reports include:

- Watt Total
- Energy in the Interval
- Demand in the Interval
- Voltage and Frequency
- Watts / Vars / VA
- Total Harmonic distortion
- All reports can be edited with new readings
Analyze Power Quality to Improve Facility Electrical Reliability

It is estimated that 30-40% of all commercial downtime is power quality related. Facility downtime results in billions of dollars lost annually. Identifying power quality events, such as voltage sags, and other fault events within critical facilities, lets managers take proactive action to avoid PQ problems from becoming catastrophic events.

The EnergyPQA.com™ system provides you with comprehensive PQ analysis including:

- Voltage Surge and Sag waveform viewer
- Current fault analysis
- CBEMA and SEMI F47 analysis
- Harmonic magnitudes and THD
- Phase Imbalance analysis
- PF analysis

Alarm on Events to Provide Timely Action and Issue Resolution

The EnergyPQA.com™ system's alarm on power quality (PQ) events sends the user emails when PQ events occur, Enterprise-wide. These alarms include:

- A new peak demand predicted in the next 3 days.
- An out of limit condition.
- A new power quality event.
- A new meter-captured waveform graph of a high-speed power quality condition.
Meter Data Management Reduces Facility System Integration

The EnergyPQA.com system’s meter data management is handled at the facility by the MeterManagerPQA™ software module, that automatically finds and collects data from installed facility meters, reducing commissioning and eliminating the need for internal IT and Engineering resources. The system pushes all stored meter data up to the Cloud servers.

Meter List, Display Enterprise-wide Meter Status

EnergyPQA.com™ System Architecture

MeterManagerPQA™ software provides the following:

- Auto discovers meters, groups them, and automatically collects historical usage, power quality, and alarm data.
- Securely pushes metering data, including all logs, alarms, waveform and PQ information to the EnergyPQA.com™ Cloud system on an interval basis.
- Stores data locally, so if network issues occur, the system provides a fail safe, since all data will be pushed to the Cloud once the network is restored.
- Reports on meters’ Quality of Service detail communication issues and provide statistical data on communication reliability.
- Determines installation and wiring issues.
- Automates most tasks, reducing the need for IT technicians.
Secured Access

The EnergyPQA.com™ system protects your data from hacking or tampering, using encryption technologies and secured access, to meet your corporate IT security requirements. The system has role-based authorization and encrypted passwords and API keys, as well as Network security SSL encryption and intrusion detection.

As a Cloud-based Energy Management solution, EnergyPQA.com utilizes Cloud computing architecture, in which data is stored redundantly, at the customer site and in the Cloud, to protect its integrity. Data is further protected with firewalls.

Key features include:

- Secured Cloud Computing Architecture.
- Data Stored Redundantly at Customer Site & on the Cloud.
- Role Based Authorization.
- Encrypted Passwords & API Keys.
- One-way push of data allows IT personnel to be confident there will be no breach of the network.

Enterprise Billing Module Provides Cost Allocation and Tenant Billing

Up to 15% Savings are Realized through Submetering and Energy Awareness Alone

- Create customize rate structures
- Time of Use billing
- Can be used for commodities other than energy (e.g., steam, gas)
- Create customized invoices and bills
- Automatically email bills and invoices
- Monthly cost summaries and comparisons
CommunicatorPQA™ Application: Basic Support for All Installed Metering

Meter Settings Configuration:

Use the CommunicatorPQA™ application to configure your meters to meet the needs of your energy monitoring goals. The application’s structure is intuitive and easy to use. Meter settings are organized into related groups and an online manual, containing detailed instructions, is embedded in the application. Some of the available meter configuration parameters are:

- Set up meter communication, including COM port addresses and Baud rate, IP addresses for Ethernet ports, protocols, mode of operation (e.g., Modbus RTU Master), etc.
- Configure the meter’s time synchronization method and DST programming.
- Set up revenue features, such as Transformer/Line Loss Compensation, CT/PT Compensation, Time of Use.
- Set up advanced options, for example, synchrophasor PMU settings, IEC 61850 settings, port control for Ethernet cards, and more.
- Perform meter testing.
- Configure and designate roles for meter security.

Log Viewer:

EIG’s Log Viewer is the charting and graphing application that comes standard with CommunicatorPQA™ software. This application is database driven, and it normalizes data from any EIG meter, so that the Log Viewer displays the data in a concise, easy-to-understand presentation. This feature is useful when locally integrating the meter. All log data is also available on the Cloud.

Depending on the meter, the available logs are:

- Historical Trends
- Limits/Alarms
- Event-Triggered Waveform
- Power Quality
- Input Status Change
- Relay Outputs
- System Events
- Flicker
- Transients
- EN 50160

Connect to Any Meter on the Network

Easily Configure Meter Settings

Log Viewer’s Main Screen
Benefits of the EnergyPQA.com™ Solution

The EnergyPQA.com™ Cloud-based Energy Management Solution yields benefit to all levels of an Enterprise.

Facilities VP (C-SUITE)

Concerns:
Reducing energy costs, improving reliability of their electrical power

What will they get from the EnergyPQA.com™ System?

• Enterprise-wide capability
• Reports on usage and Max demand
• Comparisons between facilities
• Past performance and future predictions
• Power system reliability reports

Facilities Director

Concerns:
Reducing energy costs, improving reliability of their electrical power

What will they get from the EnergyPQA.com™ System?

• Enterprise-wide access to energy usage with online dashboards
• Reports on current usage and demand, with future predictions
• Alarms on both current and future energy and power reliability issues

Engineer/Technician

Concerns:
Keeping the power system up and running.

What will they get from the EnergyPQA.com™ System?

• Information for system maintenance and power quality diagnostics.
• Alarms on Limits and Power Quality events.
Enterprise-wide Benefits

- Up to 15% savings of your electrical energy budget year over year through submetering & energy awareness alone.
- Immediate and significant cost savings by implementing even modest demand reduction.
- Reducing costly demand charges that can be as high as 50% of a facility's actual consumption.
- Prevent downtime, improve efficiencies and reduce liability. 30-40% of all commercial downtime is power quality related.
- Ease of deployment, ease of use.
- Quickly troubleshoot faults with automated dashboards, reporting and diagnostic data downloadable to CSV files.

Integrates Directly with all the EIG Metering Solutions

<table>
<thead>
<tr>
<th>Power Quality Metering</th>
<th>Sub-metering/Revenue Metering</th>
<th>Substation Metering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nexus® 1500+ Meter</td>
<td>Nexus® 1450 Meter</td>
<td>Nexus® 1252 Meter</td>
</tr>
<tr>
<td>Nexus® 1450 Meter</td>
<td>Nexus® 1272 Meter</td>
<td>Nexus® 1252 Meter</td>
</tr>
<tr>
<td>Shark® 100S/200S Meter</td>
<td>MP200® Metering System</td>
<td>Shark® 270 Meter</td>
</tr>
<tr>
<td>Shark® 200 Meter</td>
<td>Shark® ST40 Meter</td>
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<tr>
<td>Shark® 250 Meter</td>
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</tbody>
</table>
EIG’s Industry Leading Engineering Services Team

EIG’s Engineering Services team consists of highly skilled and talented engineers with a variety of expertise in the fields of electrical engineering, software engineering, and meter engineering.

What we can do for you

The Engineering Services team is available to work directly with you, offering world-wide support and a work schedule tailored to meet your needs. The team offers on-site commissioning and consulting services, providing system integration solutions tailored to your specific application. They also provide flexible customer-focused training that covers all EIG solutions, and which is available through webinar or in-person, on-site or off-site classes. The training staff are certified RCEP instructors.

Benefits of using EIG’s Engineering Services team

- Maximize your energy monitoring investments
- Optimize and improve uptime of your new software or hardware
- Create a condition-based maintenance schedule
- Meter recalibration and recertification
- On-site and remote support
- Receive hardware and software updates
- Site supervision and certification of installations
- Receive site staff (Engineers and Electricians) training

Commissioning Services

When you use the Engineering Services team to commission your meters, they will verify meter installation and wiring and proper system integration. They will work with 3rd parties to insure cross compatibility and advise you on best practices for optimal implementation. In addition, the team can assist with troubleshooting and correcting pre-installed systems, which can include equipment not manufactured by EIG.

Consulting Services

EIG’s Engineering Services team is available for remote or onsite services, master service agreements, and training. Training Classes are now offered both virtually and in-person:

- EIG offers free two-day training classes around the US, every year.
- If you and your team are not able to attend the free class, Engineering Services can create a custom class that meets your exact requirements and covers the EIG products you will be using. The team will provide either on-site or webinar-based training to ensure that your staff will be knowledgeable on all aspects of the products.
- Instructors are RCEP (Registered Continuing Education Program) certified and all training can be certified for continuing education credits.

Meter Calibration and Certification

- Some applications require equipment to be tested on yearly intervals. EIG has the capability to field test meters and provide an accuracy report.
- These testing services are available for any electrical energy revenue meter that has a test pulse.
- EIG’s Engineering Services team will test these meters either on-site or at our factory.
### Ordering Information

<table>
<thead>
<tr>
<th>Software Module</th>
<th>Description</th>
<th>Model Number</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnergyPQA.com™ System</td>
<td>Cloud-based Energy Management solution</td>
<td>EnergyPQA</td>
<td>Enterprise-wide Cloud Energy Management; Includes all of the other software-modules except for HMIPQA</td>
</tr>
<tr>
<td>CommunicatorPQA™ 5.0 Pro Application</td>
<td>Basic Professional License Seat, one user; includes MeterManagerPQA™ Software and Report Exporter</td>
<td>COMPOQA5P</td>
<td>Add Automation, System Comparisons, Meter Diagnostics, and Enterprise Meter Management</td>
</tr>
<tr>
<td>EnergyReporterPQA™ 5.0</td>
<td>Energy Management Software</td>
<td>ERPOQA5</td>
<td>Energy Dashboard, Reporting and Billing Add-on for EIG meters</td>
</tr>
<tr>
<td>Commissioning</td>
<td>The EIG Engineering Service team sets up EIG meters and/or software to work with your system.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meter Training</td>
<td>Training by RCEP instructors on all EIG solutions, which is available through webinar, on-site, or off-site.</td>
<td></td>
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</tr>
</tbody>
</table>

**Note** – You must have installed the CommunicatorPQA™ Professional Version application with MeterManagerPQA™ software to successfully run the EnergyReporterPQA™ application. If you purchase licenses for the EnergyPQA.com™ system, you receive the CommunicatorPQA™, MeterManagerPQA™, and EnergyReporter™ software as a bundled offering.

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### Meet the EIG Team

The EIG team is committed to bringing the latest in technological advancements, including EnergyPQA.com, to our Next Generation Energy Management solutions. Powered by innovative thinking and fueled by data analytics, we strive to solve the problems our customers are facing worldwide and to help them reach their desired outcomes.

Our multicultural staff speaks many languages, including English, Spanish, Portuguese, Chinese and many others. Our staff is available to help you from almost anywhere you are in the world.

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### Trademarks

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