Industrial, buildings and critical power applications

PowerLogic ION EEM

Enterprise energy management software

Advanced analytics for energy performance benchmarking, savings verification and procurement optimization.

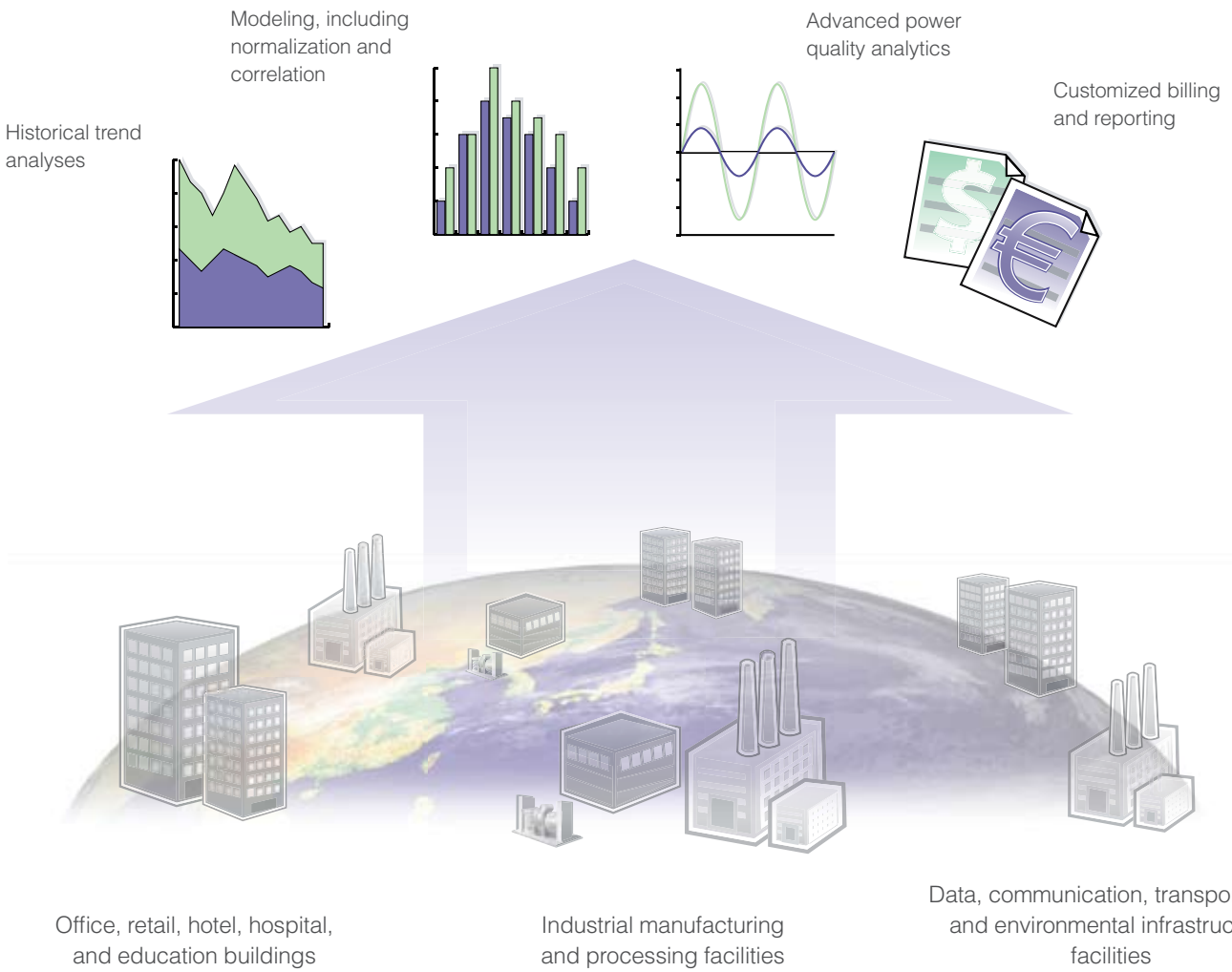
Schneider Electric

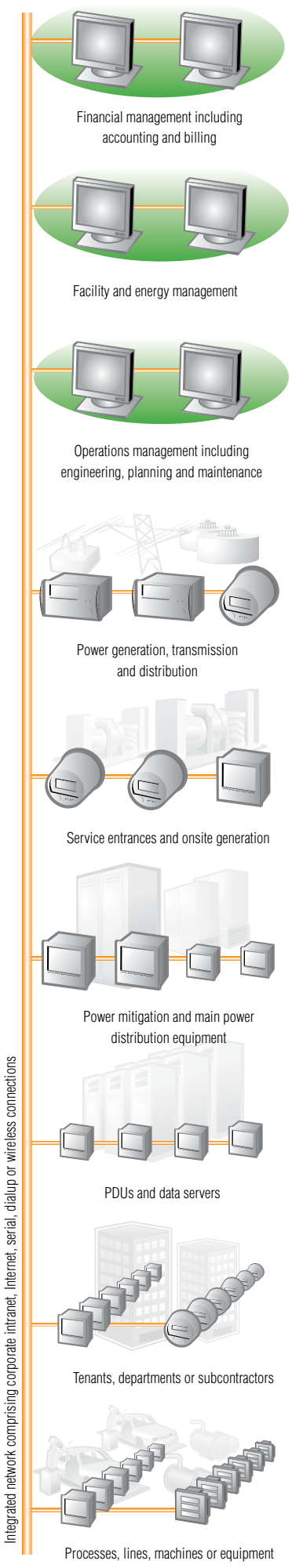
Make energy a variable, manageable cost

PowerLogic ION EEM software exceeds the traditional boundaries of energy management by uniting business and energy strategies across your entire enterprise. Key performance indicators and advanced analytics help you manage energy in financial terms and gain unique insight into the impacts of power quality on your business and all energy assets. Stakeholders from management to operations will be empowered by actionable energy intelligence to reveal opportunities, isolate problems and drive cost and risk reduction strategies.

PowerLogic ION EEM is a unifying application that complements and extends the benefits of existing energy-related data resources. These can include power monitoring and control systems, building and process automation systems, utility information systems, weather services, spot-market energy pricing feeds, and enterprise business applications. Data is automatically acquired, cleansed and warehoused. Personalized, browser-based dashboards and innovative visualization and modeling tools help you accurately monitor, validate, predict and ultimately control all energy-related expenses.

System diagram





Typical applications of PowerLogic ION EEM within a PowerLogic power and energy management system

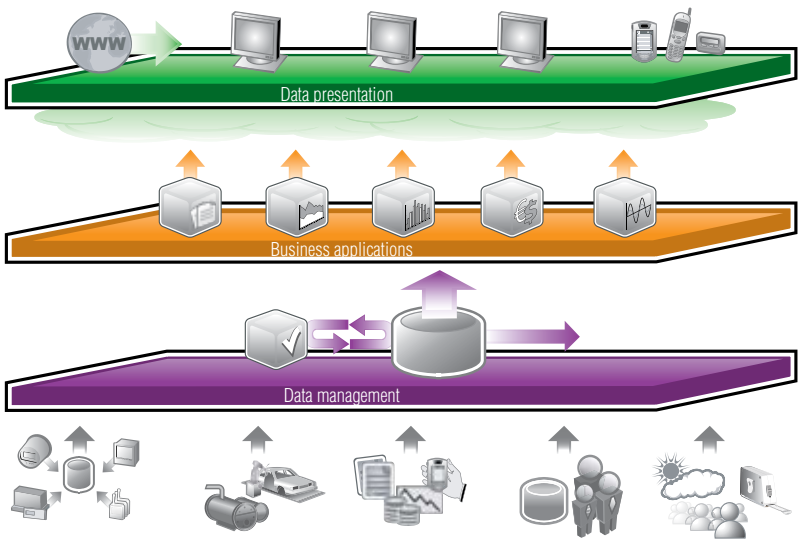
Typical applications

- Energy savings
  - Measure efficiency, reveal opportunities and verify savings
  - Sub-bill tenants for energy costs
  - Allocate energy costs to departments or processes
  - Reduce peak demand surcharges
  - Reduce power factor penalties
  - Strengthen rate negotiation with energy suppliers
  - Enable participation in load curtailment programs (e.g. demand response)
  - Identify billing discrepancies
  - Leverage existing infrastructure capacity and avoid over-building
  - Support proactive maintenance to prolong asset life
- Energy availability and reliability
  - Validate that power quality complies with the energy contract
  - Verify the reliable operation of equipment
  - Improve response to power quality-related problems
  - Optimise system relay coordination

Key features

- True enterprise-level software architecture: data quality assurance, data warehouse, web framework
- Web portal: personalized dashboards, key performance indicators, charts, trends, real-time conditions
- Reporting: rich and customized content, support for complex data and graphics, scheduled distribution
- Trending: advanced visualization, dimensional analysis, prediction, statistical rollups
- Modeling: regression analysis, normalization, correlation, integration of all relevant drivers and contextual data
- Billing: built-in rate engine and rate wizard
- Power quality analysis: wide-area event monitoring, classification, filtering, correlation
- Integration: import WAGES (water, air, gas, electricity, steam) consumption, emissions, production or business process data from enterprise system databases (e.g. metering, BAC, ERP); interface with PowerLogic or third-party automation systems to perform coordinated control of loads, generators, capacitor banks or other equipment.

Enterprise software platform



Data presentation tier

- Web portal delivers enterprise-wide access through personalized dashboards, reports, detailed analytics, and integration of views from third-party systems.
- Information and alerts via cell phone, PDA, pager, more.

Business applications tier

- Advanced analytics and reporting on every driver and relationship affecting energy cost and reliability.
- Tailors functionality to specific needs with a choice of modules: reporting, trending, modeling, billing and power quality.

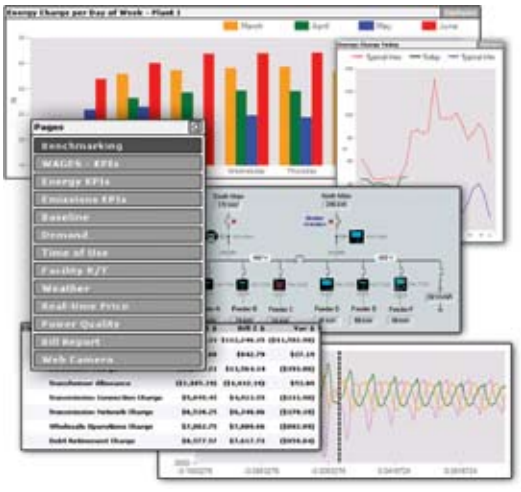
Data management tier

- Seamless integration of data from a wide range of sources: PowerLogic or third party power management systems monitoring all energy assets (power distribution and reliability equipment, generators) and consumed resources (water, air, gas, electricity, steam) and emissions, building and process automation systems (EMS, DCS, SCADA), utility data sources systems (real-time pricing, manual data input, handheld devices), line-of-business systems (ERP, EAM, accounting), and other relevant data sources (weather, occupancy, square footage)
- Data quality module assures complete and reliable data from all inputs.
- Data warehouse based on Microsoft SQL Server, interoperable with other enterprise systems.

Validation, editing and estimation tools cleanse all inputs, ensuring data is accurate and trustworthy to support dependable decision making and billing.

Data quality module

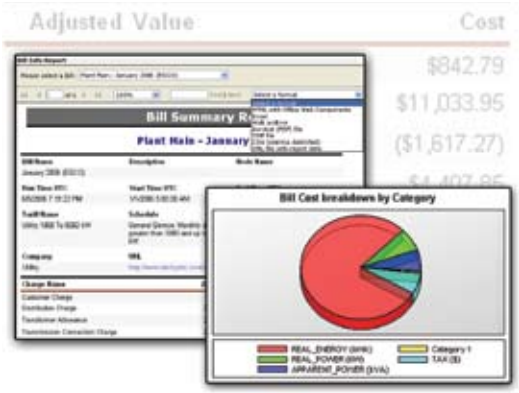
- Uses utility or corporate standards to automatically validate all data inputs: meters, weather or pricing feeds, databases, manual entry.
- Validates data in batches at specified intervals, identifies many types of data quality problems (gaps, nulls, time jitter, duplicates) and sends notification when limits are exceeded.
- Compensates for problems using a streamlined workflow of automated or manual techniques, providing an audit trail of changes and configurable data quality reports.



Personalized dashboards help management and operations personnel monitor all aspects of energy use and respond to opportunities or threats.

Web portal

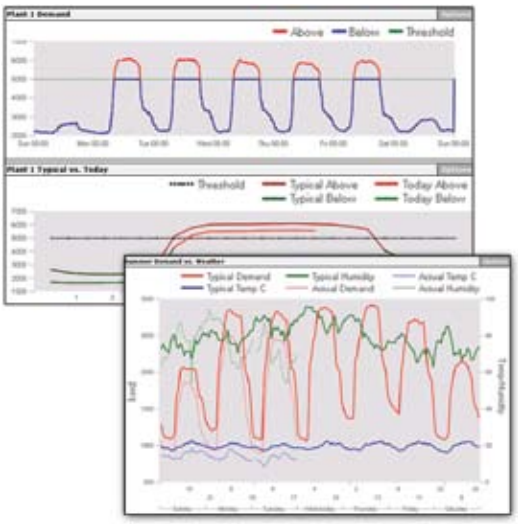
- User/group security model manages access by employees, customers, suppliers, or partners inside or outside a corporate firewall.
- Personalized dashboards deliver quick, browser-based access to key performance indicators, supporting data, and analysis.
- Displays disparate information in a variety of formats: numeric, historical trends, charts, tables, reports, facility views, external web pages, and more.
- “Drill-down” analysis to reveal increasing levels of detail.
- Integrates real-time content (e.g. measurements, status and alarm indicators) from PowerLogic System Manager™ software, PowerLogic ION Enterprise® software, or third-party web-based automation systems for monitoring and management of loads, generators or other equipment.



Produce aggregate billing, load profile, cost allocation, power quality, forecasting or budget reports to help inform stakeholders and track results against goals.

Reporting engine

- Rich billing, energy and power quality report generation capabilities with multiple pages and composite charts, tables, logos, images, hyperlinks or data from other systems.
- Zoom, search and export tools.
- Schedule-driven delivery via email or HTML format with notification.
- Our services team can assist you with custom report development.



Plot different parameters against multiple axes to reveal trends, future needs, hidden capacity, cost impacts of energy supplier choices, or potentially dangerous conditions.

Trend Analysis module

- Applies powerful business intelligence concepts to energy analysis through easy-to-use setup and visualization tools.
- Aggregates data from different sources and organizes it into multiple hierarchical views to support each user's needs: cost centers, business units, locations, buildings, infrastructure, etc.
- Reveals complex relationships between different influences: energy, demand, voltage, current, power factor, temperature, pricing, power quality, equipment conditions, and more.
- Displays historical or predicted trends in different time dimensions: days of the week, seasons, production shifts or lines, time-of-use period, and more.
- Uses custom color coding and overlays to clearly highlight: data series, time ranges, thresholds and limits.
- Reduces time series data to statistical rollups of information.

Modeling helps derive more accurate 'per unit' comparisons, exposing true issues and costs. Analyze complex non-linear relationships between utility or onsite power, weather, energy pricing, processes and infrastructure changes.

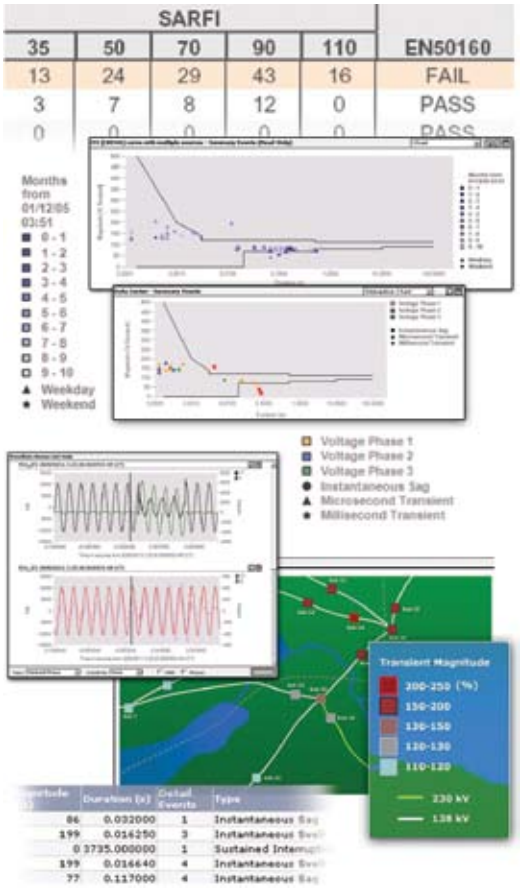
Modeling module [optional]

- Advanced algorithms accurately model energy performance based on historical characteristics and all relevant drivers.
- Enables more accurate benchmarking and comparison of facilities or processes against one another, baselining of performance and validation of actual savings, and forecasting of energy needs.
- Regression and correlation based on *ASHRAE Guideline14, Measurement of Energy and Demand Savings*.
- Normalizes energy consumption data by removing multiple independent variables such as: weather conditions across different times or locations, square footage of different facilities, or production volume for different plants.
- Provides context by integrating external data on equipment, building or other assets such as: load/performance/efficiency ratings, age, total/leasable space, occupancy rates, and more.
- Allows variables to be changed to gauge dependencies and outcomes.

Use advanced billing functions to support energy procurement, validate contract compliance, and manage load or generation assets in response to curtailment or pricing signals..

Billing module [optional]

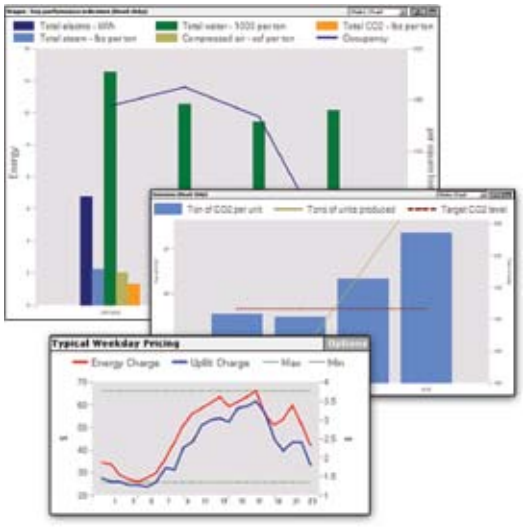
- Inputs raw energy data for all utilities, combines with complex utility tariffs, then generates business-relevant financial values and key performance indicators.
- Built-in rate wizard and rate engine accurately model and match the utility's rate structure.
- Supports tenant sub-billing or cost allocation reporting by department, production line or user-defined time periods.
- Validates and compares utility bills to identify anomalies.
- Accurately forecasts energy needs, allowing you to run 'what-if' scenarios to compare tariffs and analyze rate change impacts.
- Integrates energy cost data with ERP or other enterprise applications.



Monitor power quality risk factors, benchmark performance, determine impacts, validate contract compliance, isolate problem sources, and confirm return-on-investment for system improvements.

Power quality analysis module [optional]

- System-wide power quality and reliability analysis helps quickly identify and isolate problems and correlate events with their sources.
- Detailed analysis of steady state RMS voltages, current, power, frequency, imbalance, harmonic distortion, sags/swells, transients, phasors, and symmetrical components.
- Categorizes events, reports on compliance with international standards (e.g. SARFI, EN50160, IEEE 1159) and trends performance over time.
- Plots events against industry-standard or custom tolerance curves (ITI, CBEMA, SEMI-F47), geographically maps events indicating their age or severity, and lists events in tabular form.
- Innovative dimensional tools help reduce data and correlate multiple events with a root cause:
- Summarize events within a time range or other dimension to produce a single representative event, and then click on a selected summary event to reveal the list of supporting events.
- Visually delineate events using combinations of symbols and colors to indicate phase, type, age (most recent = darker) or other dimension.
- Classify events by different attributes, add a custom annotation (e.g. "capacitor bank switch"), and then filter on that classification.
- Graphic waveform analysis with zooming, stacking and RMS overlays.



Integrate with virtually any device, component, system or data feed to consolidate information and analysis, generate composite billing, or respond to spot market pricing to support energy buy or sell decisions..

Integration modules [optional]

- Import WAGES (water, air, gas, electricity, steam) data, emissions data, production data or business process data.
- Integrate data from online weather services or real-time pricing feeds.
- Acquire data from remote devices using MeterM@il® email communications, working within firewall restrictions.
- Export data to other enterprise systems.
- Interface with other PowerLogic software applications or other control and automation systems to perform coordinated control of loads, generators, capacitor banks or other equipment.
- All custom integration is implemented through our services group.

Examples of PowerLogic power and energy meters.

Features	Standard	Optional
SQL data warehouse	◣	
Data quality module	◣	
Web portal	◣	
Reporting engine	◣	
Trend analysis module	◣	
Modeling module		◣
Billing module		◣
Power quality analysis module		◣
Integration modules		◣

2007 FROST & SULLIVAN

North American Frost & Sullivan Award for Product Innovation

"The 2007 award recognizes Schneider Electric for its technological advancements and wide product range in the field of power quality (PQ) and energy management solutions. In total, this is the fourth award that Schneider Electric and [recently acquired] Power Measurement have received from Frost & Sullivan in recognition of achievements in this arena."
Prithvi Raj, Frost & Sullivan research analyst

Engineering services

Our services team can help you with system selection, project management, integration, custom reporting, documentation, and training to meet your organization's unique needs.

PowerLogic ION

Power Measurement and its ION products were recently acquired by Schneider Electric and integrated within our PowerLogic range of software and hardware, creating the world's largest line of power and energy management solutions.

Please contact your local sales representative for ordering information.

Visit www.powerlogic.com for more information on other PowerLogic products, applications and system solutions.

Part Number 834281

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