

# Power availability and reliability for data centres

PowerLogic™ application brochure



# Insight to mitigate risk and maximise energy performance



## The challenge

Power availability and reliability are among the most critical issues affecting your data centre's profitability and competitiveness. Increasing demand for computing power, the resulting load density growth and cooling requirements mean energy consumption can reach critical thresholds. Unplanned interruptions due to electrical system faults or power outages can result in heavy losses. The challenge is to improve performance and meet expanding demand without compromising either power availability or reliability.

## The solution

Cost-effective PowerLogic technology provides energy intelligence to help you drive down energy costs without compromising electrical network stability. Our solutions conform to the dynamic nature of data centre systems and support strategic decision making and best energy management practices.

PowerLogic software not only reports on current system status and key performance indicators, but also provides advanced analytics, budgeting, and load forecasting. It allows you to track the success of your energy efficiency measures and to fully utilise existing assets. Personnel can efficiently monitor and react to real-time power system information to improve efficiency and maintain reliability. Energy managers can identify waste, benchmark their facility and integrate energy management with other business practices to help you make the most of your energy.

PowerLogic technology can help even the best run enterprise with mission critical power requirements to increase power system reliability, improve energy efficiency, reduce costs and boost overall productivity.

We have the ideal solution for mission-critical systems including:

### Data Centres

- Financial
- Corporate

### Business Networks

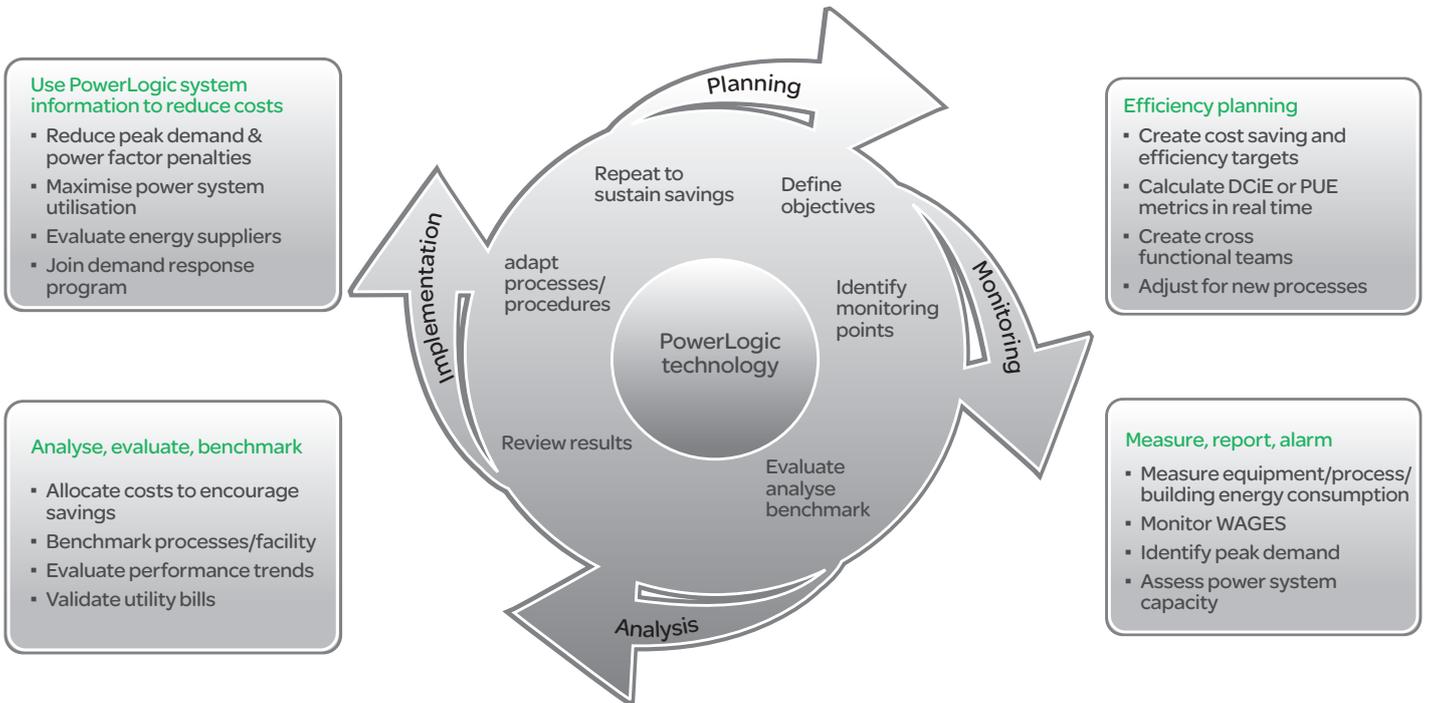
- Telecommunication enterprises
- Server farms
- Internet Service Providers
- Media & broadcasting

### Health care

- Hospitals
- Research facilities

### Critical infrastructure

- Airports
- Sea ports
- Emergency response centres
- Government



## Advanced software, intelligent metering, integrated solutions

### The right products for the job

A PowerLogic solution can monitor a mission-critical system, a nationwide business or a global enterprise through networked intelligent energy meters linked to PowerLogic software. Meters can be selected to match to the requirements of the location being monitored. They use flexible communications methods to connect to software that retrieves, aggregates, and processes meter data, logs it and notifies operations staff of alarm conditions. It can also integrate data from existing building and process management systems so you can incorporate energy efficiency into your global management strategy.

It removes guesswork and helps you to discover which efficiency opportunities offer the quickest or highest payback potential. It can help increase reliability and can optimise your system, making the most efficient use of your power distribution system.



Expand your PowerLogic solution with complementary Schneider Electric low voltage electrical network products such as Sepam protective relays, Masterpact breakers and Micrologic control units.



Schneider Electric, the global specialist in energy management, offers integrated solutions that make energy safer, more reliable, efficient and productive.

#### Why PowerLogic technology?

Our solutions help you exceed traditional energy management to unite your entire enterprise. With the world's largest, most advanced range of software and meters, systems work together to help reveal risks to reliability and new energy cost reduction opportunities.

#### Business advantages:

- Tangible abilities provide a quick return on investment
- Interoperability features enable data sharing and easy network management through HTML, SNMP and XML
- Products to match your needs, portfolio and budget
- Solutions can grow with your energy management needs and resist obsolescence

# Applications

## Infrastructure optimisation

### Increase reliability

Downtime costs money. Power sags/swells, transients and harmonics damage equipment and interrupt production. PowerLogic technology can help you:

- Identify the root cause of power quality issues
- Rapidly communicate critical conditions before they escalate
- Help coordinate and validate the proper operation of backup power systems
- Decide if harmonic filters are needed and size them appropriately

### Extend equipment life

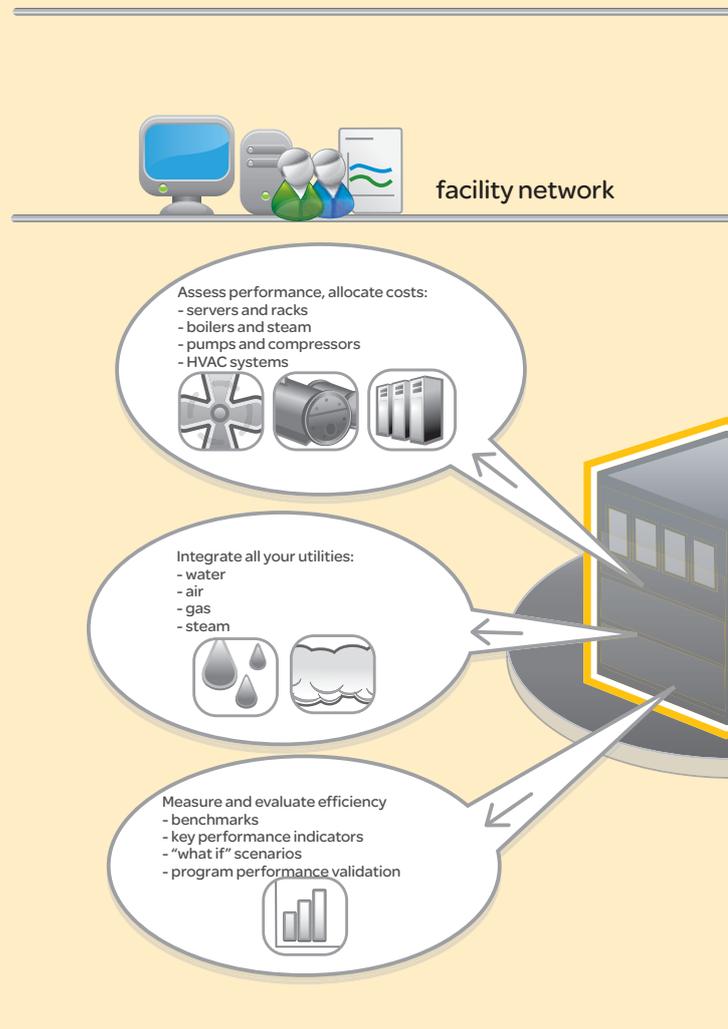
Well maintained equipment uses less energy, is more reliable and contributes to improved productivity. A PowerLogic system supports preventive and proactive maintenance for a wide variety of your energy assets.

- Determine the optimum timing and frequency of maintenance instead of using an arbitrary schedule
- Automatically track the number of relay or breaker trips, UPS operations or charge remaining in batteries.
- Alarm on transformer temperatures, motor performance parameters and other wear indicators.
- Reduce effort and labour costs

### Optimise power distribution systems

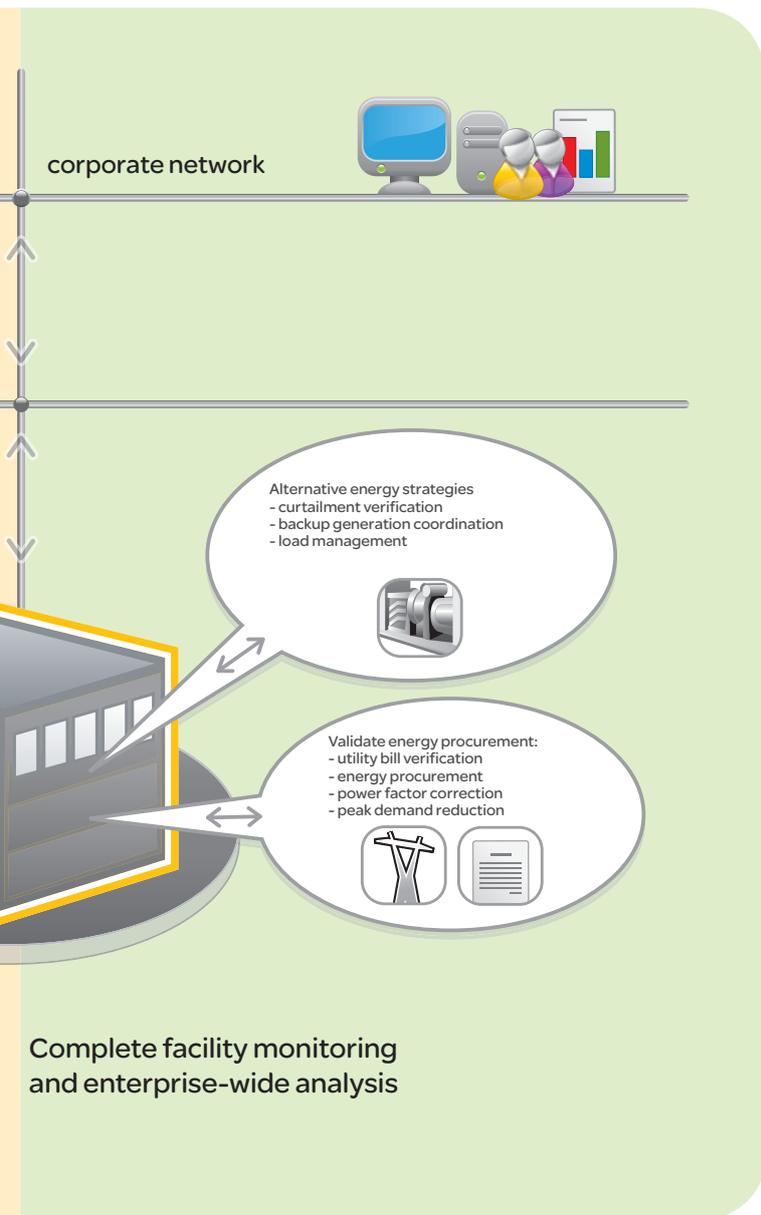
Minimise capital expenses associated with overstressing or under utilising your power distribution system. A PowerLogic system enables you to design a power system that meets but does not exceed the requirements of new facilities, expansions or retrofits.

- Design power systems according to actual usage patterns and accurate forecasts, not guesswork
- Automatically generate load profiles to reveal historical and present load patterns and hidden capacity
- Determine if your existing infrastructure will accommodate new racks or servers



## Power quality analysis and compliance

Reliable and high-quality power is essential to the bottom line, yet power quality-related issues are becoming more complex. A range of powerful tools support detailed root-cause analysis, helping you quickly track the propagation of disturbances and isolate problem sources. This could include transients caused by capacitor bank switching or improper STS transfers caused by a shorted capacitor in a UPS. Accurate monitoring, analysis and reporting of power quality information supports the monitoring of power reliability and availability.



# >3%

percentage of energy drawn from entire electrical grid by data centres

### Verify utility-specified power quality and availability

Many energy suppliers are incorporating power quality clauses into their energy contracts, sometimes based on industry-standard metrics. If your facilities have critical power requirements, your energy contract may guarantee a minimum level of power quality and availability, and will likely specify some form of compensation for non-compliance.

PowerLogic technology can help assure you receive the level of power quality and availability specified in your contract. The system:

- Monitors and analyses all aspects of power quality, including harmonics, disturbances and other important characteristics
- Presents results as power quality compliance reports consistent with international standards such as EN50160
- Features simple pass/fail indicators on each important metric
- Uses measurement methods certified to IEC61000-4-30 Class A measurement standards, ensuring highest reporting accuracy and reliability

## Alarming and event notification

To maintain a high level of power quality to keep critical systems running and maximise equipment life, your operations personnel need to keep on top of real-time conditions and respond quickly to alarms.

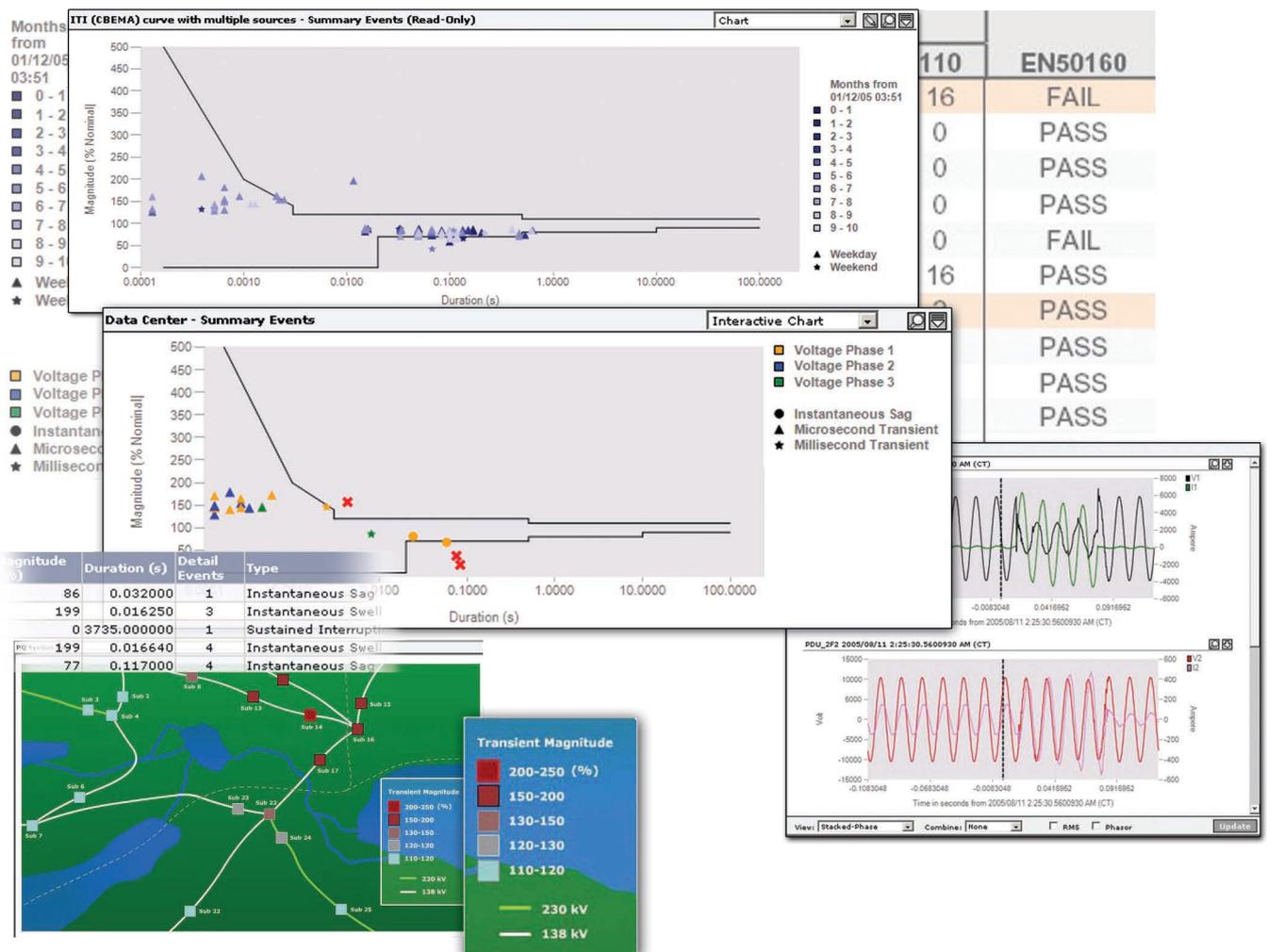
PowerLogic technology from Schneider Electric continuously collects data from key points across your substations or facilities, including generators, transformers, transfer switches, UPS's and PDU's. It provides centralised display of all power quality-related conditions and immediately alerts personnel to impending problems, maintaining system continuity and integrity.

## Energy efficiency

Energy efficiency is becoming the central issue in data centre management. The more energy efficient your data centre, the lower its on-going operating costs will be. Managers need access to detailed power data when calculating total cost of operations. But they also need to know how much power is devoted to driving actual computing/IT components (servers, for example) versus ancillary support elements like cooling or lighting.

PowerLogic technology supports:

- Analysis to strengthen your data centre infrastructure efficiency (DCiE) metric
- System data to create and validate power usage effectiveness (PUE) metric
- Load disaggregation of total energy billing into costs for individual loads



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



## Cost allocation

Studies show that energy efficiency improves most when people have a stake in success. A PowerLogic solution encourages energy efficient behaviour and supports cost accounting by accurately allocating energy overhead to different user groups or processes. You will discover where and when energy is consumed and you'll be better able to motivate employees to meet corporate energy cost reduction goals.

PowerLogic technology provides tools to:

- Automatically collect, calculate and report costs for buildings, departments, racks, or other equipment
- Remove electricity budgeting guesswork, minimise administrative costs and reduce data entry errors
- Determine the true impact of energy prices on your critical power enterprise

## Procurement optimisation

PowerLogic technology can help you make more informed energy procurement decisions. With a complete understanding of your energy profile, you can compare which purchasing options provide the most benefit. It can help you reduce long-term financial risks associated with price volatility, lower your costs through bulk energy purchasing and manage multiple energy supply agreements.

PowerLogic technology also enables you to:

- Consolidate cost information into easy to understand reports
- Track real-time Internet pricing feeds
- Integrate costs for fuel, environmental levies, maintenance and interconnection

# Schneider Electric solutions

## Recommended products for power availability and reliability

### Software:

PowerLogic ION™ EEM  
PowerLogic ION Enterprise™  
PowerLogic SCADA

### Power and energy meters:

PowerLogic ION7650  
PowerLogic ION7550  
PowerLogic PM800 series

## Complementary products

PowerLogic branch circuit power meters  
Sepam™ protective relays  
Masterpact™ and Compact™ breakers  
Modicon™ programmable logic controllers  
Altivar™ variable frequency drives  
Tesy™ motor controllers  
Accusine™ harmonic filters  
Varplus<sup>2</sup>™ capacitors  
Varpact™ power factor correction modules



PowerLogic technology is your key to achieving sustained results. PowerLogic products together with Schneider Electric services and expertise will help you align strategic decision making and energy management best practices for a lower total cost of ownership.

Please visit  
[www.powerlogic.com](http://www.powerlogic.com)

## The global specialist in intelligent energy management

Schneider Electric provides innovative, integrated solutions that make energy safer, more reliable and more efficient while making your operations more productive and sustainable.

From building automation, critical power and cooling systems to expert services and support, our unique solutions are focused on energy efficiency, reliability and safety. We help you reduce costs and emissions, stay connected at all times, and tap into a clean, secure and uninterrupted power supply.

Let us help you discover new opportunities to make the most of your energy.

Visit [www.schneider-electric.com](http://www.schneider-electric.com)

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