

# Panoramic Power

## The Changing Landscape of Energy Management Systems

Whitepaper  
February 2018



# Energy Management

Financial, Regulatory and Social Responsibility.

At one time, energy management was the province of large facilities such as factories, large offices complexes, government buildings and hospitals. But as energy costs have continued to rise - with no end in sight - the imperative to manage and reduce energy consumption has extended to small and medium-sized facilities as well. Today, a chain of relatively small buildings such as retail and food services establishments can significantly affect P&L through energy management.

Yet energy management is not only a financial matter – it is now a governmental and social priority. Shortages and price fluctuations have convinced regulators of the need to incentivize responsible energy consumption through initiatives such as ISO 50001 and the Global Energy Efficiency Acts. At the same time, the perception of energy efficiency has become a brand imperative and conservation is now a central facet of corporate social responsibility programs.



## Retail is an Exceptional Opportunity to Save

In retail, energy is one of the most substantial on-going operating expenses. Using technology to manage energy consumption across retail outlets is an exciting opportunity to increase the bottom line. No other technology investment has the power to generate such high returns:



Retail companies spend nearly \$20 billion on energy each year



A 10% reduction in energy costs for the average full-line discount retailer can boost net profit margins by as much as 2 %



A 10% reduction in energy costs for the average limited service restaurant can boost net profit margins by as much as 4%



A 10% reduction in energy costs for the average supermarket can boost net profit margins by as much as 16%

# Finding the Right Solution for 100 Stores

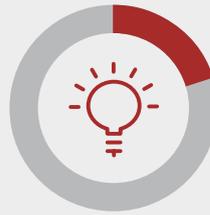
When it comes to optimizing energy usage, retail chains face a number of unique challenges.

## Excess energy consumption in retail can exceed 30% of total

- Off hours consumption
- Poor maintenance
- Incorrect set points
- Undetected failures
- Wrong BAS scheduling
- Inefficient equipment



Optimizing consumption requires ongoing device level monitoring across the chain



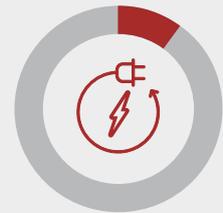
20% Light



35% Refrigeration



35% HVAC



10% Others

**Having a large number of widely dispersed sites makes it more difficult to install and maintain systems and to standardize and enforce processes.**

Rather than one central energy management team, there are small stores with little or no energy management expertise on premise, and typically one group of overworked facility management team that is busy mainly with the day to day operation. Instead of a dozen large machines, there are thousands of small air conditioning, refrigeration and lighting systems.

Many Energy Management systems are too expensive to scale and too complicated to use because they were designed with

large industrial facilities in mind. In order to benefit from energy management, retail chains need solutions that are specifically designed to address the 4 key challenges of a large, distributed, multi-site business.

### Visibility

When it comes to energy optimization, the biggest challenge is to understand the current state of usage. This difficulty increases by an order of magnitude for retail chains with a large number of points of sale. In order to make an accurate assessment, you need granular, 3-dimensional visibility into each kilowatt hour (KWH) that tells you where the energy is being used, what device is using it, and when – including real-time alerts about off-hours usage, spikes and stoppages.

# Data Collection

The problem with monitoring every system at every site is collecting the data.

**Retail stores do not always have building management or building automation systems in place, and if they do, these systems are unable to provide device level information on energy usage.**

There is generally one electrical meter, and switching to a set of smart meters in all sites is expensive and intrusive. In order to benefit from granular, real-time, device-level data, retail stores need an automatic, non-intrusive and cost-effective solution for transmitting the information to a central repository. The solution should be easy to install with minimal disruption on the overall business operation.

### Big Data Analytics

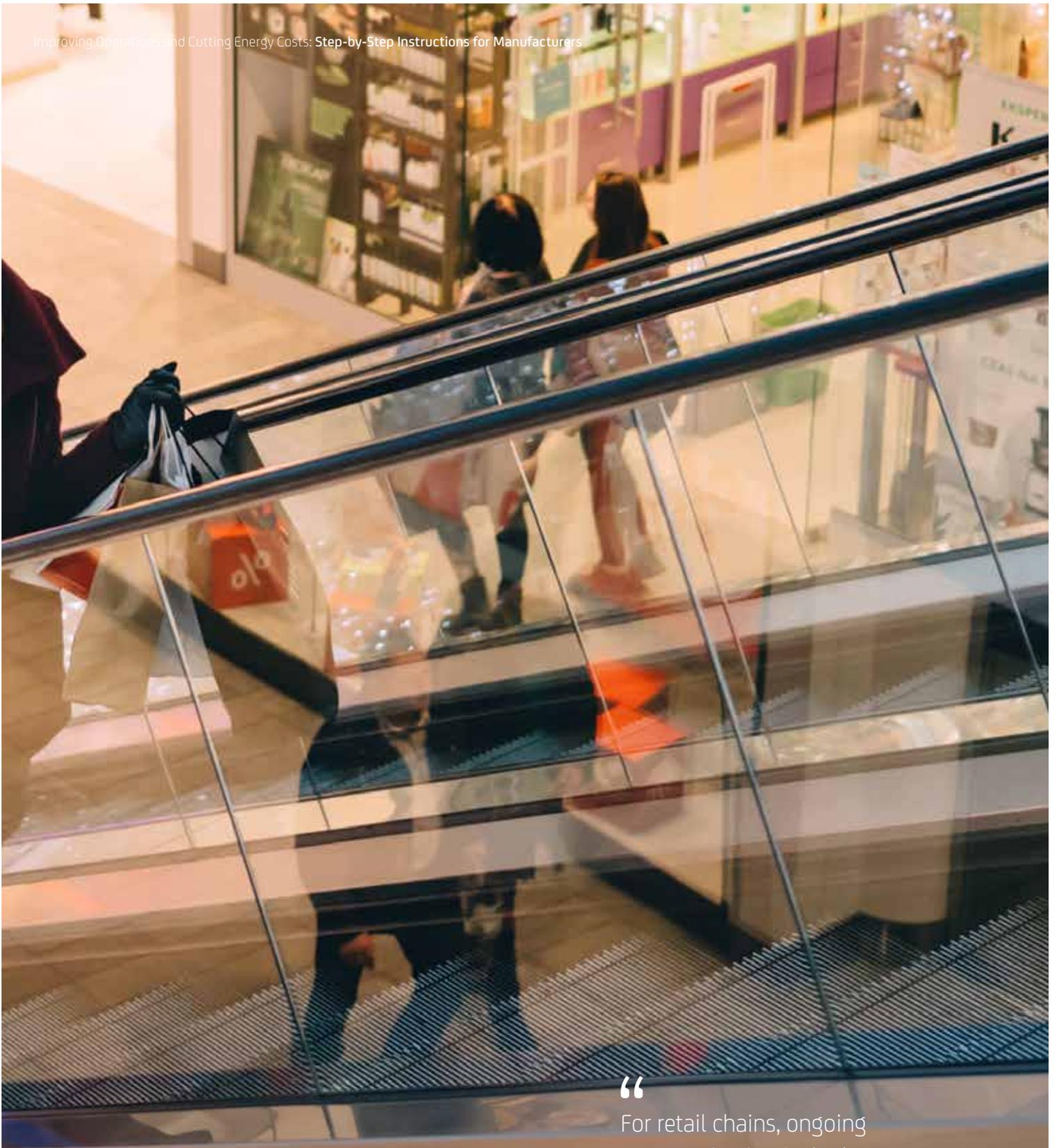
Analyzing large quantities of energy data is a specialized skill beyond the usual scope and available resources of facility management for a retail chain. Data must be processed in real time to reap the benefits of preventive maintenance and immediate remediation. Periodic analysis must be performed in order to assess

trends and define the changes that will lead to savings. Retail chains need Business Intelligence solutions and services that can turn data into actionable intelligence.

### Change and Accountability

Finally, with conclusions in hand, the ultimate challenge is putting them to work. With so many staff members distributed at so many sites, how do you implement new processes and drive accountability? For retail chains, ongoing communication is the key to success. You need a solution that provides role-based reports combined with direct alerts and reports to store managers, maintenance teams and executives. You need short and long-term training and support that you can trust. You need to be able to follow up on the implementation and results of recommended actions.





“

For retail chains, ongoing communication is the key to success. You need a solution that provides role-based reports combined with direct alerts and reports to store managers, maintenance teams and executives.”

## Best Practices for Success

Many of the leading retail chains are now treating energy as an asset.

They are managing consumption to not only reduce expenses, but to increase profits by taking advantage of demand-side opportunities offered by local grid operators. Following are some of retail best practices:



### Control off-hours consumption via real time, device level alerts:

When a device is not turned off during closing hours, the store receives an alert and locates the source of the problem. Monthly reports to headquarters show sites where set-up is not optimized. In many times, auto-scheduling systems are improperly set, manually overridden or simply not doing what they are supposed to do. The immediate feedback provides ongoing optimization and prevents energy waste during off hours.



### Prioritize retrofits across multiple sites with chain-wide benchmarks:

To get maximum return on your investment, use device-level metrics to compare equipment performance across the chain, and prioritize accordingly. Instead of making generic expensive decisions on retrofits, you can make decisions on a per device per site level, prioritize them based on the expected ROI and get maximum return on each investment



### Detect and prevent failures in advance for critical equipment:

Device-level alerts based on detected anomalies in the energy consumption pattern of a device will notify you if equipment is not operating properly. By drilling down to consumption and maintenance history you can identify breaking systems and schedule maintenance. Other than the impact on energy consumption, such failure detection can save maintenance cost as well as prevent critical crises related to the business operation.

“

CBS copy to insert here  
illab imendem quasperchil  
est, od quam que resequossit  
mil eritionsero tem ab in tem  
ea veliquia seque dolorem  
oluptasse lit maxime velique  
lant. Ed es dolupiciunt estrum  
fugitibusam repudis quissuntiae  
vernatem fugitatem exerem mil  
ea veliquia seque dolorem mil  
oluptasse lit maxime velique  
lant. Ed es dolupiciunt estrum  
estiani enihiciur tem aliquam.”

Centrica Business Systems.



To learn more about energy management solutions and corporate sustainability, visit [centricabusinesssolutions.com](https://centricabusinesssolutions.com)

**centrica**  
Business Solutions

[centricabusinesssolutions.com](https://centricabusinesssolutions.com)

©2017 Centrica plc. Registered office: Millstream, Maidenhead Road, Windsor, Berkshire SL4 5GD. Registered in England & Wales No. 3033654

WP-2018-6-US\_EN