

# Intelligent Load Management

## Maximum Demand Response Revenue with Minimal Risk



### BENEFITS

- Increased revenue — retailers receive cash payments for participation
- Completely automated — no involvement required from store managers or facilities team
- Business continuity — helps avoid or reduce business disruptions from blackouts
- Reduced energy expenses — especially during peak rate periods
- Strengthened brand — maintains consistent customer experience in all sites
- Improved Corporate Social Responsibility (CSR) deepened stakeholder and community relations
- Carbon negative power generation — reduces CO2 emissions

**The electric infrastructure in the United States is antiquated and overstressed, and the situation is expected to get worse as demand consistently**

**outstrips investments in traditional generation, transmission and distribution.** For the past 125 years, the primary way of dealing with this shortfall during peak energy emergencies has been rolling blackouts — events that cost United States businesses \$100 billion per year, primarily in lost productivity, according to U.S. Department of Energy estimates.

### Demand Response

To help protect the grid, many utilities now offer load management programs like demand response (DR), where the provider pays customers willing to reduce energy consumption during peak energy periods, such as during the recent heat waves. While the idea of DR programs is a simple one — reduce the impact to all ratepayers by lowering demand in a more surgical manner than blackouts — many actual DR solutions have severe and unintended consequences to participants' businesses. Civic-minded retailers want to help, but they cannot afford to risk alienating their customers in the process. What these chain operators need is a proven solution that automatically and systematically reduces energy consumption without impacting their customers' experience.

# Stable Energy Supplies, Consistent Customer Experience

## Intelligent Load Management

Specifically designed to protect the customer experience while maximizing revenues, Siemens' Intelligent Load Management (ILM) is a turn-key aggregation service that pays retailers for participating in Demand Response programs — without dramatic or negative business consequences. The ILM service can leverage installations of Siemens' clean energy platform, Site Controls™, or connect to existing energy management systems via an internet gateway. ILM automatically and intelligently reduces peak energy usage by executing predefined and business-friendly DR strategies — all while constantly monitoring site conditions to protect customer comfort.

## ILM Features

- Immediately deployable with the Site Controls EMS or existing EMS equipment
- Utilizes pre-defined business rules

- Real-time automated monitoring protects the customer experience
- Site aggregation minimizes risk
- Siemens handles all technical and business interactions with utilities
- Retailers do not have to commit minimum load shed for individual locations
- In many jurisdictions, Siemens is able to provide higher payments than other DR aggregators

Working with retailers, Siemens jointly defines and inputs business rules for each site, such as business hours and desired temperature/lighting levels for various peak emergency severity scenarios. When Siemens receives a "load curtailment" request from the energy provider, ILM strategies are executed — at all ILM customer sites in the affected region. Accounting for business rules across those sites, and using the unique aggregation and "auction" capabilities, Siemens treats

the energy usage across all sites as a single resource and intelligently reduces the lowest consequence loads first. ILM is able to adjust to on-site conditions by precisely monitoring temperature in different zones, energy consumption and output of individual HVAC units and lighting circuits, and equipment conditions. The aggregation of hundreds of retail locations into a single resource further mitigates risk — retailers do not have to commit a minimal load reduction for specific sites and each location automatically 'opts-out' if environmental conditions or HVAC equipment failures threaten to negatively impact the shopping experience.

With ILM, businesses get paid, maintain a positive customer experience, and help keep electricity flowing — for their operations, consumers, employees and partners.

Aggregate Load Profile for 66 locations in San Diego Demand Response Program

