



## Overview

**Company:** TOMS King  
**Website:** [www.tomsking.com](http://www.tomsking.com)  
**Headquarters:** Crystal Lake, IL  
**Industry:** Quick Serve Restaurants

**Company Profile:**  
 TOMS King owns and operates 59 Burger King restaurants across Illinois, Ohio, and Pennsylvania. With more than 1,700 team members, TOMS King has grown in sales to become one of the largest food service franchise companies in Illinois.

**Business Situation:**  
 TOMS King needed an energy management solution to increase visibility into asset-level energy consumption, help them analyze trends and issues and allow them to optimize control settings without sacrificing customer comfort.

**Solution:**  
 GridPoint installed HVAC and lighting control along with asset-level submetering and monitoring at TOMS King restaurants. GridPoint also provided Energy Advisory Services, Control Support Services and a mobile application.

**Results:**  
 TOMS King achieved substantial energy savings and now has access to GridPoint's dynamic alerts, reports, and dashboards that will provide for ongoing optimization of energy use.



## Business Situation

In a quick serve restaurants, there are dozens of energy consuming assets that are critical to the successful operation of the business including HVAC units, kitchen equipment, indoor and outdoor lights. These assets are often required to run throughout the day in order to maintain normal operations and ensure customer comfort, but with a comprehensive energy management system (EMS) in place there are numerous opportunities for savings.

As an energy conscious quick serve restaurant, TOMS King deployed GridPoint's EMS at six initial Burger King restaurants in April 2013. The restaurant operator identified savings opportunities through increased visibility into energy consumption, detailed analysis of trends and issues, and more intelligent control over HVAC and lighting using GridPoint's EMS. Once GridPoint's solution proved successful, TOMS King extended it to their entire restaurant portfolio including their many recently-remodeled restaurants in Illinois, Ohio, and Pennsylvania.

## Solution

For the initial sites, GridPoint implemented HVAC and lighting controls, installed extensive asset-level submetering and monitored several pieces of equipment as detailed in Figure 1. TOMS King also gained access to GridPoint's cloud-based software platform, GridPoint Energy Manager, which aggregates and visualizes data collected at each site. Additionally, TOMS King subscribed to GridPoint's Energy Advisory and Control Support Services to get the most value out of that EMS data while optimizing their fleet of Burger King restaurants.

Control	Submetering	Monitoring
<ul style="list-style-type: none"> <li>5 HVAC units</li> <li>Parking, kitchen, and dining lights plus signage</li> </ul>	<ul style="list-style-type: none"> <li>5 HVAC units</li> <li>Parking, kitchen, and dining lights plus signage</li> <li>Refrigeration (coolers/freezers)</li> <li>Ovens, fryers, fryer fans, and broiler fans</li> <li>Biscuit ovens and egg cookers</li> <li>Ice, milkshake and slush machines</li> <li>Water heaters</li> </ul>	<ul style="list-style-type: none"> <li>HVAC runtime, zone and supply temperatures</li> <li>Cooler/freezer temperatures</li> <li>Cooler/freezer door position</li> </ul>

Figure 1. GridPoint implemented the above EMS configuration at six TOMS King sites.

## HVAC Control Changes

- Specific cooling setpoints
- Control point for overrides
- Implemented HVAC Recovery algorithm to reduce peak demand when transitioning to occupied setpoints
- Implemented HVAC Setback algorithm to preserve comfort when transitioning to unoccupied setpoints

## Results

TOMS King's energy savings were driven by several operational improvements including more aggressive, but comfortable HVAC setpoints along with practical temporary adjustment allowances, intelligent morning HVAC recovery and overnight setback, and greater insight into equipment issues with advanced reports and alarms customized for TOMS King restaurants.

TOMS King instituted a consistent heating and cooling policy to ensure comfort for guests and more than 2,000 team members. GridPoint recommended a gradual implementation plan, which reduced any perception of abrupt change and allowed for identification of limited exceptions to accommodate unique situations related to building orientation, mechanical system idiosyncrasies, and seasonal variance. For both HVAC and lighting, the GridPoint solution put an end to unnecessary cooling and lighting usage during unoccupied hours.

GridPoint also worked with TOMS King to develop a formal process for all heating, cooling and lighting adjustments across their fleet of Burger King restaurants. The GridPoint mobile and desktop applications provide visibility to TOMS King's Directors of Operations and District Managers along with 24-hour call center support to ensure the energy management program continues to deliver restaurant comfort, operational visibility and energy savings. These tools and policies provide the foundation for continuous commissioning of the facilities and avoids drift away from the goals of the energy management program.

In addition, TOMS King lowers energy costs by reduction of consumption and demand peaks using GridPoint's advanced control strategies. Specifically, HVAC Setback/Recovery and Load Curtailment algorithms, as pictured in Figure 2 below, allow equipment to intelligently approach occupied and unoccupied periods based on automated learning and tolerances established for the program.

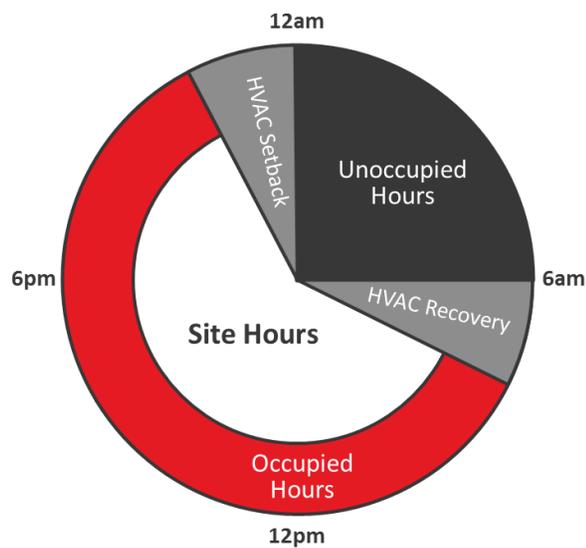


Figure 2. GridPoint's HVAC Recovery, Setback and Load Curtailment features improve operations

# Real Results.

TOMS King has also found great value in GridPoint's Energy Advisory Services which give customers access to GridPoint's data analysts who have years of industry expertise and unique knowledge of vertical best practices based on GridPoint's deep customer base and archive of 75 billion energy data points.

These analysts helped TOMS King identify anomalies, performed enterprise-wide analysis, and produced custom reports to expose even greater savings opportunities. In particular, TOMS King was able to increase their understanding of various HVAC issues with a report that compared zone temperatures, supply temperatures and cooling setpoints along with unit energy demand (kW) and run time (Figure 3).

This report, which was made possible with GridPoint's asset-level submetering and monitoring data, was instrumental in exposing periods of time where the HVAC units were calling for cooling but the energy demand had flat-lined and the resulting zone temperatures spiked above the setpoint.

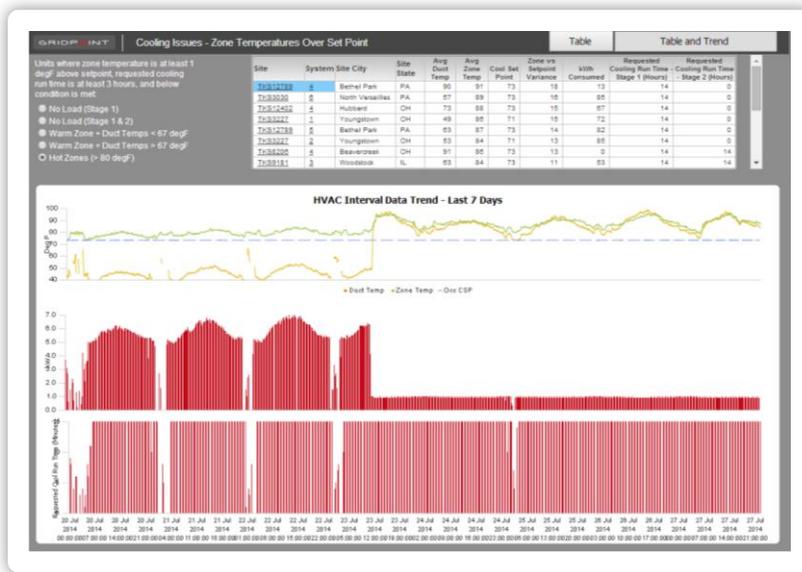


Figure 3. Custom HVAC issue report created for TOMS King

Lastly, GridPoint worked closely with TOMS King to implement a series of intelligent alarms that alert management when system issues arise on site. GridPoint's alarms take into consideration multiple submetering and monitoring channels and feature configurable pending open and pending close periods so conditions must persist for a certain length of time before the alarm will be triggered or closed. This feature reduces "noisy" alarm notifications, which tend to be ignored over time.

GridPoint developed alarms and exception reports for the coolers and freezers which leveraged data collected from temperature probes and door monitoring devices. This allowed TOMS King to see when the cooler or freezer temperatures moved above or below preferred thresholds and provided visibility into extended periods of time that the cooler or freezer doors were left open. These features complement and support TOMS King's existing food management and safety programs.

## Conclusion

By leveraging GridPoint's comprehensive EMS, TOMS King achieved valuable energy savings and implemented operational improvements which will continue to deliver quantifiable results.

Additionally, TOMS King now has access to a wealth of real-time, asset-level data through GridPoint Energy Manager and GridPoint's Energy Advisory Services for unprecedented visibility into how their sites operate and consume energy. This data enables detailed analysis of enterprise-wide trends and provides a constant feedback loop between TOMS King and restaurant management for more intelligent and optimized system management and control.