



CASE STUDY: BIG LOTS

Retailer Controls Energy Costs And Improves Comfort

The Las Vegas climate creates a major challenge to businesses trying to manage energy costs and keep customers and staff comfortable. The discount retail chain Big Lots saw an opportunity to contain costs and maintain comfort with an automated control system, and incentives from NV Energy made the investment a bargain for the retailer.

Big Lots installed energy management systems at five Las Vegas stores to manage HVAC run times, set-points, heating and cooling stages, and duty cycling throughout the store. The controls also manage interior and exterior lighting schedules. The automated system monitors and adjusts lighting and HVAC equipment to maintain comfort and maximize efficiency.



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CALL | 800.342.6335
EMAIL | commercial@nvenergy.com
WEB | www.nvenergy.com/commercial

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Project Summary

Prior to the installation, store personnel were responsible for setting the thermostat and operating the store lighting. Managers typically set the temperature to 72 degrees for cooling and 69 degrees for heating. Store procedures did not specify setback temperatures for after-hours, so the units ran continuously. Personnel controlled the lighting for the sales floor, office and employee area. Operating hours vary by store but, on average, the full lighting load was turned on at 8 a.m. and turned off at 11 p.m., seven days a week. Some of the locations used timers to turn the exterior lights and store sign on at and off.

After installing the energy management system, the HVAC and lighting circuits were split into zones and labeled for “customer” and “employee.” The zones operate according to the programmed time-of-day parameters. The HVAC set-points are restricted to 75 degrees for cooling and 67 degrees for heating. The night setback temperatures are now 84 degrees and 60 degrees. The exterior lights are controlled by a photocell sensor.



Energy-saving Equipment

The system software measures and records energy consumption and demand (kWh and kW). This information helps the retailer identify unusual usage patterns and address peak demand. By optimizing the HVAC and lighting equipment, the company can minimize downtime for repair and extend the equipment lifetime. NV Energy rebates offset the initial project cost by \$9,291 and reduced the company’s payback period, with more than 137,000 annual kWh savings.



Project Results

Building Type: Retail

Project Type: Retrofit

Measures: Energy management system

Incentive: \$9,291

Projected Annual kWh Savings: 137,191