



A Case Study

How a leading retail chain in US uncovered major energy cost reduction opportunities

The Challenge

HVAC and lighting are major source of energy consumption in the retail industry, accounting for up to 60% of electricity spending. As a result, a leading high end retail chain located in US and operating across the country and in Canada, investigated the possibility of decreasing energy consumption through their mechanical and electrical systems.

The chain was looking to improve energy efficiency in its existing locations as well as developing energy efficiency standards for their new construction. The challenge was to identify significant energy cost reduction opportunities with ease of implementation and minimal interruption to their operations.

The Solution

Star Energy was engaged to take the lead on this project based on its previous experience in the retail sector, specifically for its expertise in HVAC systems. The chain decided to conduct comprehensive energy audits across eighteen pilot locations to identify energy cost reduction opportunities to achieve its ambitious target. To ensure that the energy savings are sustained over the lifetime of the retrofit, a rigorous monitoring and tracking system was also developed.

The Result

Across eighteen pilot locations, Star Energy identified eight energy cost reduction opportunities. After thorough engineering assessments and calculations, the top five measures were picked based on key financial metrics and the ease of implementation in multiple locations across the portfolio. Significant energy cost reductions were observed through M&V performed on key locations. A predictive maintenance system was also proposed to replace the ongoing preventive maintenance system with a potential of savings over \$1M annual savings in maintenance cost.

Profile

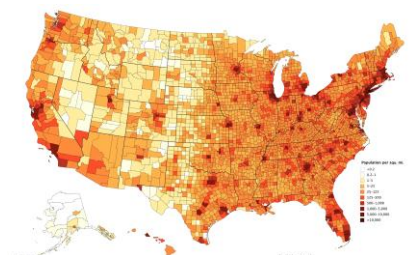
The chain has over 100 locations spread across multiple weather zones and has a variety of HVAC and lighting systems. Most of the locations have a Building Automation System (BAS)



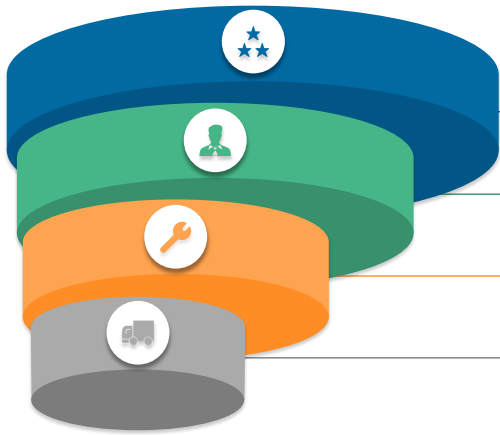
Average area for each store:
177,000 Sq. Ft.



Average electricity use index:
20.02 kWh/Sq. Ft.



Program: Major steps



Monitoring and Tracking

Ongoing monitoring and tracing of results for sustained savings

Measurement and verification

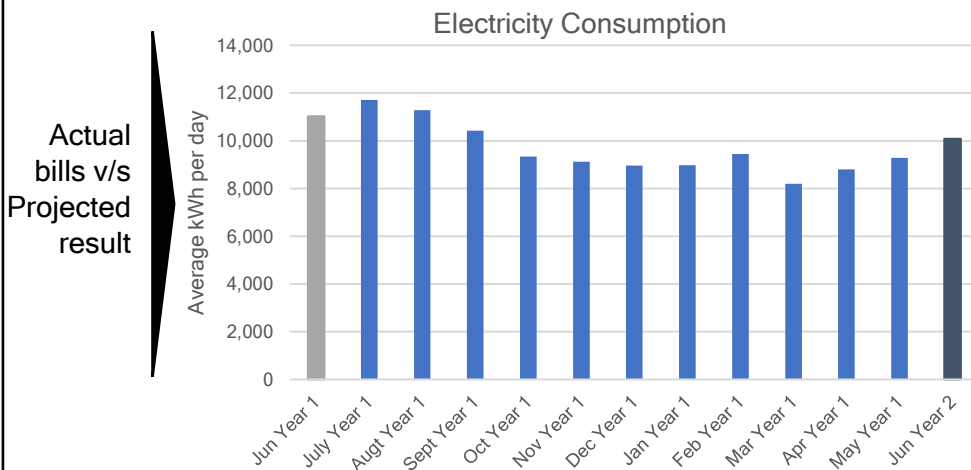
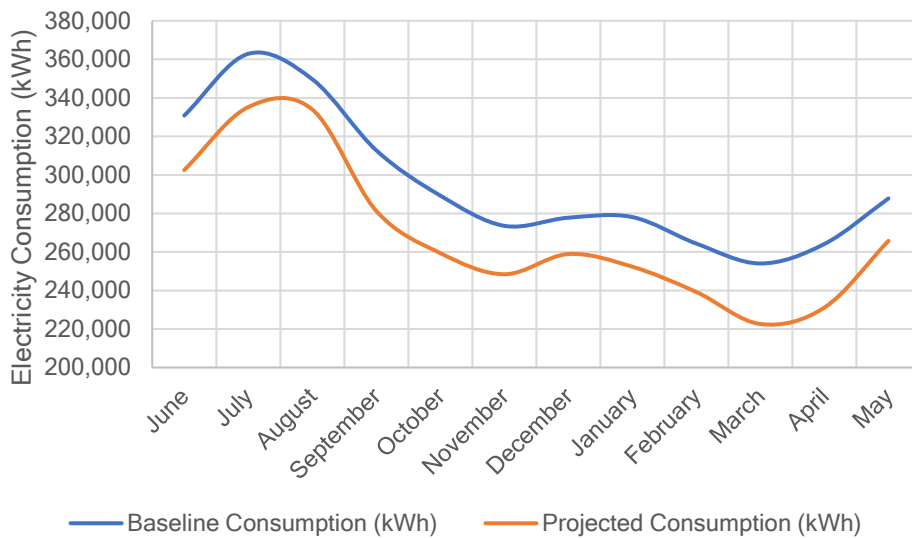
Measurement and verification of savings

Implementation

Selection of level of support for implementing energy cost reduction measures

Discovery

Benchmarking, Data analysis and opportunity identification through detailed energy audit



Highlights

\$38,000

Average electricity cost reduction per facility.

9% Average

savings on annual electricity cost of the facility.

Approx. 2.5 years

Average simple payback

Approx. 35%

IRR

Over \$1M

reduction in maintenance cost for the chain

Over \$4.5M

savings for the chain across all eligible locations



Star Energy is an energy management company that specializes in the retail sector. Our experience working with major clients across North America has helped us to develop a program that not only optimizes the returns on capital but also improves asset values and the life of mechanical and electrical systems. We have worked with utilities across the US and Canada and our program is typically eligible for utility incentives that reduce implementation costs and further improve payback from the program. Our program is highly customizable to each client's financial and operational requirements.

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