

Leading National Grocer Takes Industry-Leading Sustainability Action by Upgrading HVAC Fan Motors

The Challenge

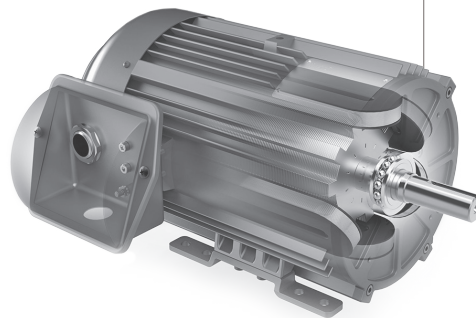
As a Better Buildings Challenge Partner, this international grocery chain was already using submetering and monitoring tools to measure, analyze, and publicly share the performance of its energy efficiency and climate protection initiatives in its stores. It was also working with manufacturers, trade allies, industry peers, the Department of Energy, the Environmental Protection Agency, and other organizations to further its energy efficiency goals.

But the company was interested in doing more. They wanted to reduce HVAC system energy and facilities maintenance costs in accordance with their sustainability program and profitability goals. Maintenance costs specifically related to failures of its variable frequency drive (VFD) motors when bearings overheated also needed to be addressed. The solution needed to provide intelligent controls and system monitoring. It also needed to be highly reliable and fault resistant.

The Solution: Upgrade Supply Fan Motors with the Turntide™ Smart Motor System

The company selected Turntide Technologies to implement an innovative solution addressing its key needs: fan energy savings, intelligent controls, and improved monitoring of the HVAC, refrigeration, and pump systems.

The store's facilities contractor replaced two, single-speed, three-year-old Baldor supply fan motors with Turntide Smart Motor Systems. The system featured a wireless LAN connection to each rooftop unit (RTU) to establish a two-month energy baseline for all heating and cooling modes. Run hours for each mode were determined using data from the building automation system. A power meter was also installed.



Profile

Industry-leading grocery chain specializing in selling food products without artificial preservatives, colors, flavors, and sweeteners



BUILDING SIZE

67,613 sq. ft.



PROJECT TYPE

2 rooftop units (RTUs)



SMART MOTOR SYSTEM SIZES

(2) 2 HP

Results

By replacing two RTU fan motors with the Turntide Smart Motor System, the company achieved significant energy savings and added intelligent controls and monitoring to its system. Savings were so significant, the company committed to upgrading additional stores with Smart Motor Systems.

Efficiency

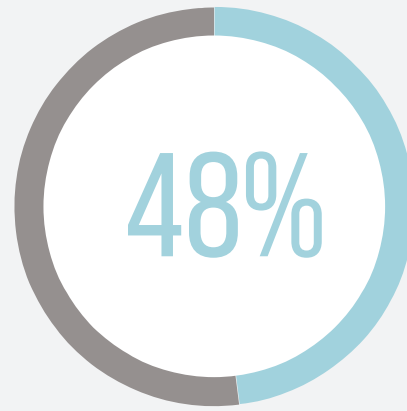
- In a comparison of baseline data with data collected after the motors were installed (using a weighted average for heating and cooling modes), the company realized annualized HVAC fan motor energy savings between 46-48%
- The upgraded system also achieved over 80% savings during ventilation mode and more than 30% savings during the heat/cool mode, while maintaining comfort for employees and shoppers
- The increased efficiency supports the company's commitment to reduce energy consumption by 20% by 2023, compared to a 2010 baseline

\$8,700/RTU

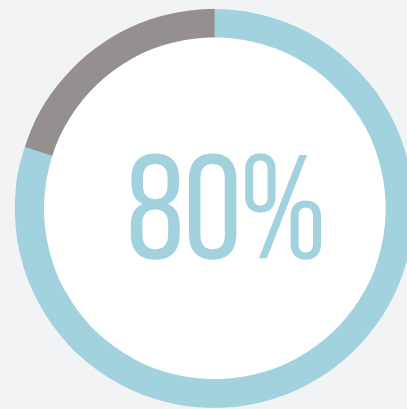
ANNUAL SAVINGS SUPERMARKETS CAN GAIN
BY INSTALLING **HIGH-EFFICIENCY UNITS**

20% HVAC ENERGY SAVINGS POSSIBLE
BY RETRO-COMMISSIONING AN EXISTING HVAC UNIT

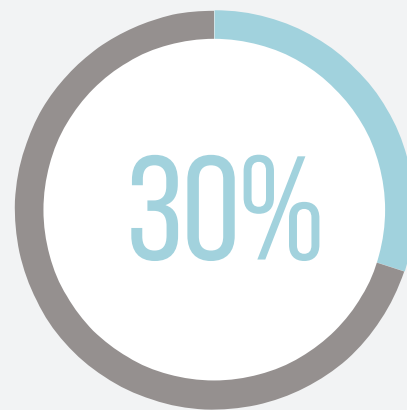
Source: Retail Industry Leaders Association, Energy Savings Opportunities and Tactics for Retail



↓
Overall decrease in fan energy consumption



↓
Fan Energy Savings during ventilation mode



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Fan Energy Savings during heat/cool mode



Turntide Technologies (formerly Software Motor Company) has developed the world's most efficient and intelligent electric motor system. The revolutionary Smart Motor System is based on proven switched reluctance technology, now managed with advanced cloud software and connected to precise controls via IoT. Turntide's vision is to eliminate the 25% of global electricity consumption that is wasted by legacy motors, thus accelerating the world's transition from fossil fuels. Turntide is based in Sunnyvale, Calif., with offices in San Francisco; Arlington, Wash.; and Kennesaw, Ga. Turntide has installed Smart Motor Systems with dozens of customers, reducing their motor electricity consumption by an average of 64%, and is powering the systems of leading OEMs. For further information, visit www.turntide.com.

POWER IS VALUABLE. USE IT INTELLIGENTLY.

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