

# Upgrades to HVAC Motors Results in Big Energy Savings for Leading Hotel Chain

Environmental awareness is on the rise. The hospitality industry is catering to guests who are seeking out earth-friendly travel options. Hotels, particularly big brands, are embracing the movement. They are investing resources to implement not only environmentally friendly procedures, but also to track energy use and install energy-efficient equipment and lighting.

Technological advancements continue to provide ever more efficient options to improve building performance but budgets are limited. Deciding when to completely replace equipment and when to simply upgrade is key to maintaining budgets. The best solutions are those that not only improve sustainability but also make good business sense.

## The Challenge

Global climate goals are pushing international companies to develop ambitious emission reduction targets. Large chains are using science-based carbon reduction targets (SBTs) to make their greenhouse gas reduction plans. Smaller hotel groups are measuring their CO2 emissions, adhering to energy efficiency, and/or obtaining LEED certifications to track success.

Ideal solutions not only minimize energy consumption, they also reduce operating costs—while having a positive (or at minimum no) impact on the visitor experience. LEDs, room controls, motion sensors, linen reuse programs, and other behavioral changes are a great start. But they are only a start. According to Lodging Magazine, HVAC accounts for 32 percent of the lodging industry’s electricity use.

## The Solution

Gain more control and better efficiency from HVAC units by replacing the existing electric motors with the Smart Motor System. To demonstrate the system’s efficacy, Turntide™ engaged a major hotel chain for a pilot project in Boulder, CO.

A four-week monitoring and verification (M&V) period established a baseline of the supply fan. The motor was then replaced with the Smart Motor System. M&V was performed on the Turntide motor for an additional period; first at constant speed, and then at multispeed operation.



## Profile

A brand leader with some of the biggest names in business travel and luxury accommodations, the hotel combined boasts 30 brands and more than 7,000 properties across 131 countries



### BUILDING TYPE

Hotel in Boulder, CO



### PROJECT TYPE

HVAC Supply Fan Motor Replacement



### SMART MOTOR SYSTEM SIZES

(1) 5 HP

# Results

The Turntide solution saved energy in all operating modes, with the most significant savings and ROI seen when replacing constant speed motors.

Turntide Motor: 5 HP	Constant Speed	Multispeed
Fan % energy savings	47%	57%
Annual energy savings (kWh)	5,183 kWh	6,236 kWh
Annualized utility savings (\$0.10/kWh)	\$414.64	\$498.88
Total materials and labor	\$1,250	\$1,250
Utility rebate	\$600	\$600
ROI (years)	1.57	1.3

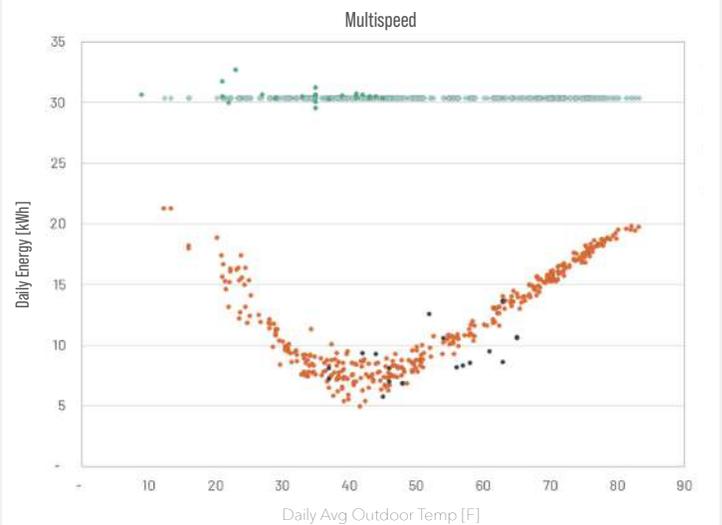
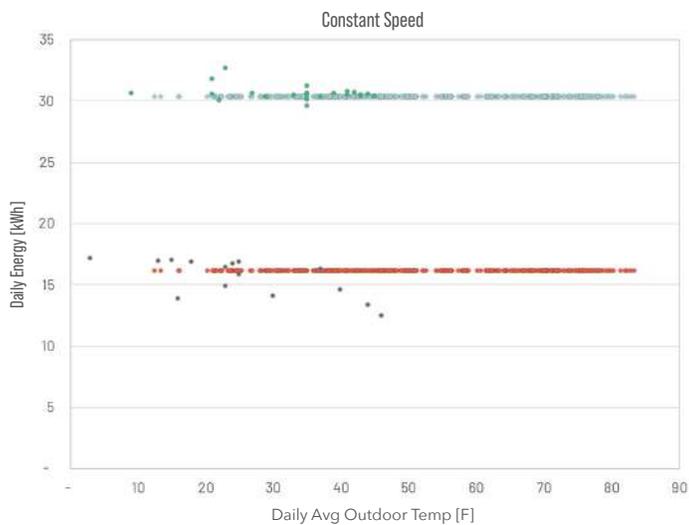


Up to 57% fan energy savings gained by installing optimal efficiency motors

# Conclusion

Based on these results, it's clear that replacing existing induction motors with the Turntide Smart Motor System is a smart energy solution for the hospitality industry--it saves energy and money without replacing the entire unit, can be remotely controlled and monitored, and integrates into existing building management systems.

## DAILY FAN ENERGY



- Existing (model)
- Existing (measured)
- Turntide (model)
- Turntide (measured)

- Existing (model)
- Existing (measured)
- Turntide (model)
- Turntide (measured)



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](http://www.turntide.com).

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