

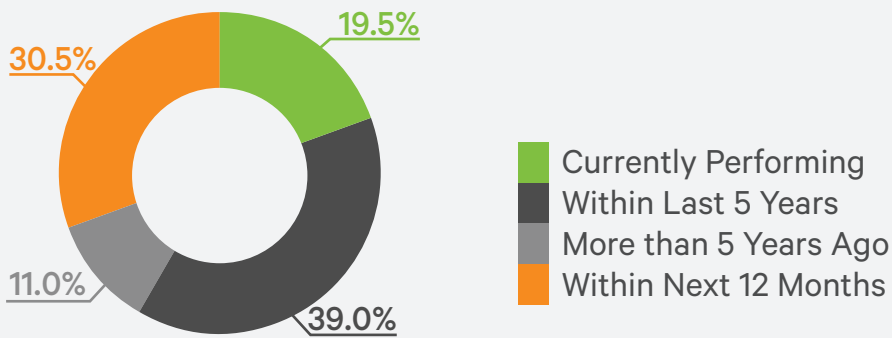
# THERMAL SYSTEM UPGRADES HIGHER RELIABILITY AND EFFICIENCY



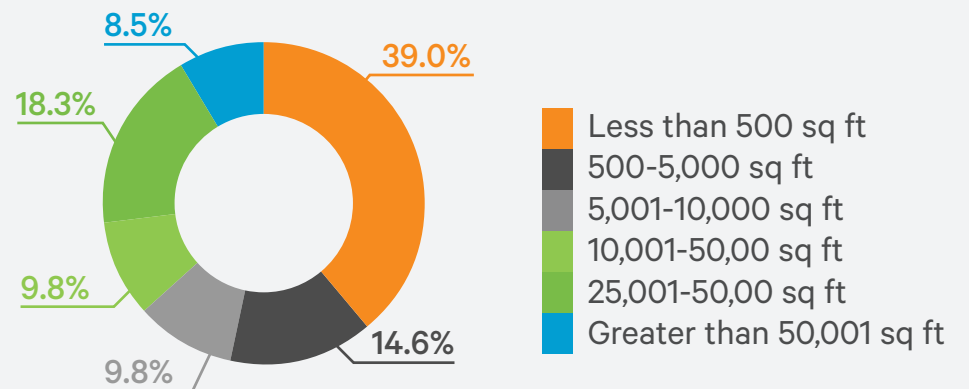
# 50%

of data center cooling systems are being upgraded or will be upgraded during the next 12 months, according to a survey of IT, Facilities, and C-Level managers in the United States and Canada by Vertiv™.

Here's a look at current thermal upgrade activity, according to Vertiv research.



While 40% of data centers have been upgraded in the past five years, nearly 20 percent are in process and about **31% will be upgraded in the next 12 months.**



**Most of the upgrades** are accounted for by data centers **under 10,000 square feet.** 18% of the largest data centers are doing upgrades.

## PRIMARY DRIVERS FOR DOING THE THERMAL RETROFIT RANKED IN ORDER OF IMPORTANCE



Equipment Reliability



Energy Efficiency



Need Additional Capacity



Consolidating Data Centers

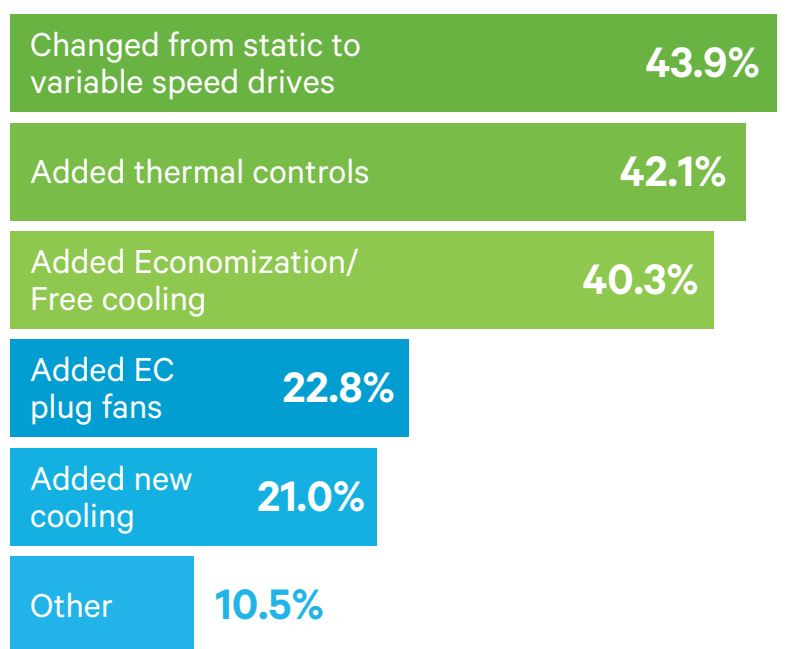


Increased Monitoring / Control

## WHAT DID YOU DO, OR PLAN TO DO, TO RETROFIT YOUR DATA CENTER'S COOLING?

The most common upgrades include adding variable speed drives that allow cooling system fans to be operated according changes in airflow requirements, instead of operating them at constant speeds. Adding variable speed drives is a relatively low-cost way to quickly improve efficiency and extend the life of equipment.

Thermal controls are being added or replaced to optimize the performance of variable speed technologies and improve protection and insight. Economizers are being added to provide "free cooling" when outside temperatures allow.



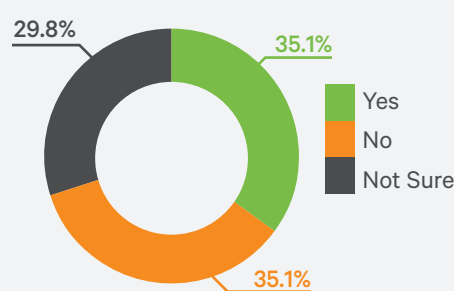
## DIFFICULTY OF COMPLETING MAJOR STEPS IN THE RETROFIT PROCESS

(Most Difficult To Least Difficult)

- 1 Getting budget approval
- 2 Cooling interruption mitigation
- 3 Selecting the right options and configurations
- 4 Calculating ROI & payback
- 5 Integrating with BMS
- 6 Obtaining efficiency rebate
- 7 Configuring thermal controls

## ENERGY REBATES

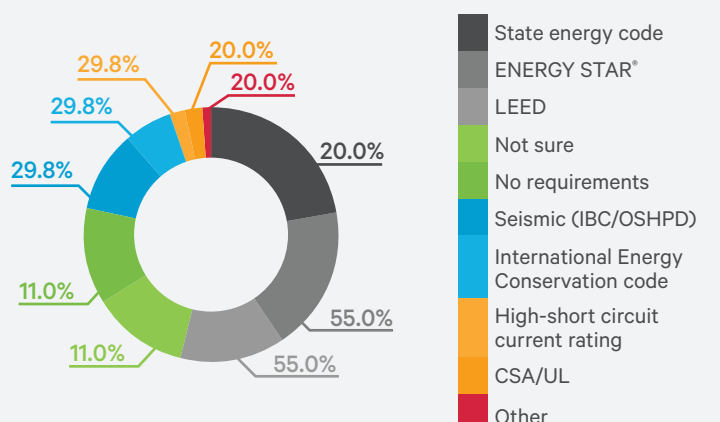
Did you receive, or do you expect to receive, an energy rebate from the retrofit?



**ENERGY REBATES ARE AVAILABLE IN EVERY STATE.**

## CERTIFICATIONS

Certifications/standards required for thermal retrofit?



**LEARN MORE ABOUT THERMAL SYSTEM UPGRADES: [VertivCo.com](http://VertivCo.com)**