CASE STUDY

Fannie Mae

EmPOWER MARYLAND

SAVINGS BY THE NUMBERS

$1,077,477
Total incentives

4,897,625
Annual kWh savings

$213,000
Estimated annual savings

THE OPPORTUNITY

As a leading source of affordable financing for mortgage lenders, Fannie Mae is focused on identifying opportunities and finding effective solutions. After meeting with Potomac Edison's Energy Solutions for Business team in the beginning of 2018 at their data center in Urbana, Maryland, the team discovered that there was significant energy waste in their original Computer Room Air Handler (CRAH) setup. With the opportunity identified and a comprehensive retrofit recommendation in hand, the teams agreed to move forward with an energy-saving solution.

THE PROJECT

Data centers as big as Fannie Mae's generate substantial amounts of heat, accounting for 2% of the total annual electric use in the U.S.* Similar to the cooling systems used in high-rise buildings, CRAH units use fans, cooling coils and a chilled water system to minimize energy consumption and optimize cooling airflow.

Through their analysis, they discovered that the company's old CRAH units had constant speed fans and outdated controls, limiting their ability to reduce supply fan speeds. Additionally, hot air and cold air was mixed throughout the room resulting in poor cooling efficiency.

ENERGY EQUIVALENCIES

131,551
Incandescent lamps switched to LEDs

441,620,719
Number of smartphones that could be charged

400
Average Maryland homes' energy use for one year

Source: U.S. Environmental Protection Agency

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THE RESULTS

Since 2019, to reduce their energy use, lower overhead and improve airflow in the center, the team set out to retrofit all 52 existing CRAH units for maximum efficiency. On top of saving energy, the project upgraded CRAHs to:

- Slow down supply fans to meet the actual cooling load using EC plug fans and advanced controls.
- Optimize cooling airflow to further reduce supply fan speeds.
- Affect chiller operation by noticeably reducing cooling load.

"Performing these energy efficient upgrades in our data center is as an essential step in Fannie Mae's continued commitment to leading and innovating in green finance. Potomac Edison's energy efficiency programs have made it easier to accomplish that goal."

George Ashim
Facilities Engineer

Questions? Visit **energysaveMD-business.com** or call us at **855-801-5803** to discover how we can help your business or organization save.

EmPOWER Maryland programs are funded by a charge on your energy bill. EmPOWER programs can help you reduce your energy consumption and save you money. To learn more about EmPOWER and how you can participate, go to energy.maryland.gov/Pages/Facts/empower.aspx.

By participating in energy efficiency and peak demand reduction programs, customers agree to allow their utility to retain ownership of all Capacity Rights which refers to the demand reduction associated with any energy efficiency or peak demand reduction measures for which incentives were provided by the Company.

**Source: The Natural Resources Defense Council (NRDC)*