



Predictive HVAC Optimization

What is this Technology?

This cloud-based software combines building data with local weather forecasts, energy prices, tariffs, and demand response signals, in order to run simulations that determine the most efficient HVAC operating strategy for the following 24-hour period. Based on this information, the software then communicates with the building automation system (BAS) to automatically make changes to air handler unit (AHU) set points to deliver real-time optimization and savings.

Why are GSA and DOE Interested?

Predictive HVAC optimization is applicable across a wide range of facility types and sizes. It provides agnostic interaction with a building's BAS as well as remote engineering support and management, and implementation does not require hardware upgrades. This application has the potential to reduce not only energy costs but also the operating burden on facility managers, and makes it possible for all commercial buildings—not just the largest and most modern facilities—to deliver energy savings without compromising occupant comfort.



ENERGY EFFICIENCY Based on deployments to date, this technology promises 10% to 25% ongoing HVAC energy savings, resulting in aggregated gross savings of approximately \$0.20 to \$0.40 per square foot.



COST-EFFECTIVENESS This monthly-subscription-based application has minimal upfront costs. The manufacturer estimates payback at less than five months.



OPERATIONS & MAINTENANCE Predictive HVAC optimization technology runs persistently in the background without human intervention to ensure the facility's mechanical systems are running as efficiently as possible. Standard installation and system "learning" takes between two and three weeks. An additional four weeks are required for fine-tuning and optimization.



DEPLOYMENT POTENTIAL This technology has broad deployment potential due to its open architecture and limited number of requirements for host locations.

This evaluation will be hosted as a joint effort between the U.S. Department of Energy and the U.S. General Services Administration.



The Green Proving Ground program leverages GSA's real estate portfolio to evaluate innovative sustainable building technologies. The program aims to drive innovation in environmental performance in federal buildings and help lead market transformation through deployment of new technologies.