



Digital Energy Demand Management Platform

Technology Overview

Buildings consume 75% of electricity in the U.S.¹, offering significant potential for saving energy and reducing the demands on the electric grid.² Digital Energy Demand Management uses artificial intelligence and machine learning to optimize energy utilization. It integrates with building automation and control systems to help building owners identify energy patterns, eliminate energy waste, improve energy performance, and better manage electricity. The technology's gateway device tracks real-time energy data, displayed through the software's dashboard, so building/facility managers can visualize energy consumption, carbon emissions, and efficiency-based improvements.

The energy platform introduces a unique feature that enables owners to pay forward their energy savings through an energy gifting program. This initiative provides direct assistance with utility bills, supports weatherization efforts, and enhances access to renewable energy for under served communities. Low-income households, constituting about 44% of U.S. households, face an energy burden three times higher than non-low-income households, reaching as high as 30% in some regions.³

Why is GSA Interested?

This technology can help GSA building managers optimize energy consumption without compromising normal business operations and occupant comfort. Temporary, semi-permanent, and permanent demand reductions from behind-the-meter resources can be used to support electric grid reliability and resiliency while improving energy performance focused on demand response, energy efficiency, and renewable energy.

According to the manufacturer, this technology has the potential to cut energy consumption by over 10%, reduce GSA's annual carbon emissions by 168 MMT, and offer a payback period of less than 1 year.

Deployment Potential

The digital energy demand management technology is applicable to all GSA facilities but will be most beneficial for those who participate in demand response programs with their local utility.

¹NREL. NREL Researchers Reveal How Buildings Across United States Do—and Could—Use Energy: New Data Set Reveals How Improvements to U.S. Buildings Could Reduce Carbon Emissions and Increase Occupant Comfort, <https://www.nrel.gov/news/features/2023/nrel-researchers-reveal-how-buildings-across-the-united-states-do-and-could-use-energy.html#:~:text=Buildings%20are%20responsible%20for%2040,building%20stock%20is%20also%20essential>, accessed 11-2023.

²LBNL. How Managing Building Energy Demand Can Aid the Clean Energy Transition, <https://newscenter.lbl.gov/2021/07/21/how-managing-building-energy-demand-can-aid-the-clean-energy-transition/>, accessed 05-2023.

³U.S. Department of Energy. Low-Income Community Energy Solutions, <https://www.energy.gov/scep/slsc/low-income-community-energy-solutions>, accessed 11-2023.

Green Proving Ground (GPG), in collaboration with the U.S. Department of Energy, is evaluating the real-world performance of a Digital Energy Demand Management Platform in federally owned buildings within GSA's inventory. The technology will be provided by COI Energy and coordinated with other ongoing evaluations of this technology.