



U.S. OFFICE OF PERSONNEL MANAGEMENT (OPM) DATA CENTER

Washington, D.C.



\$0.4MM

Verified Annual Savings

5,300 MMBTU

Verified Annual Energy Savings

2MM GAL.

Annual Water Savings

At a glance

CEG Solutions modernized OPM's HQ data center with ESPC and DOE AFFECT grant support, upgrading IT, cooling, and power systems to cut energy waste, boost resiliency, and reduce PUE from ~2.7 to ~1.3 while ensuring 24/7 reliability.

Project Highlights

- \$0.4M in annual savings
- 5,300 MMBtu energy savings
- 1.1M kWh electricity & 2M gallons water saved annually
- 14% total energy reduction
- Reduced PUE from ~2.7 to ~1.3
- \$1.5M DOE AFFECT grant support

OVERVIEW



The OPM HQ in Washington, DC — a hub for administrative offices and mission-critical IT — had already seen major efficiency gains under prior ESPC projects. Still, its data center operated with an elevated PUE that fell short of federal standards. CEG was tasked with modernizing the facility to meet CIO goals, enhance resilience, and continue OPM's progress toward deep energy savings.



STRATEGIES



Energy & Operational Efficiency, Performance Contracting, Resiliency



Awards

- 2020 DOE Federal Energy & Water Management Award
- 2021 DOE Better Buildings Integrated Lighting Campaign – HVAC Integration Recognition

Energy Conservation Measures

- Hot aisle containment design
- Redundant variable-speed CRACs
- High-efficiency UPS replacement
- Energy Recovery Ventilator (ERV) installation
- Rightsized cooling towers
- UPS & PDU upgrades
- Generator replacement & emergency power consolidation
- Solar PV replacement
- Retrocommissioning controls

SOLUTIONS

CEG implemented a comprehensive upgrade strategy: hot aisle containment for better temperature control, redundant variable-speed CRACs, a high-efficiency UPS, and a new ERV. To address resilience, CEG replaced aging UPS and PDU units, removed water-cooled infrastructure, and consolidated emergency power onto a new generator. Additional measures included retrocommissioning controls, solar PV replacement, and cooling tower upgrades. Together, these improvements cut energy and water use while delivering a modern, reliable data center.

RESULTS

The OPM Data Center project reduced annual energy use by 5,300 MMBtu, electricity by 1.1M kWh, and water by 2M gallons — saving \$0.4M each year. PUE improved from ~2.7 to ~1.3, aligning with federal CIO goals. Supported by \$1.5M in DOE AFFECT grants, the project expanded OPM's progress under prior ESPCs, bringing total OPM energy savings across phases to nearly \$3M annually.

