



DATA CENTER ESPC CASE STUDY

NASA Jet Propulsion Laboratory

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About the Project

Building upon our previous successful partnerships with NASA JPL, which culminated in the 2016 National Energy Project of the Year from the Association of Energy Engineers, CEG Solutions (formerly Clark Energy Group) (CEG) was awarded a new ESPC project at NASA JPL that will facilitate migration of an offsite data center onto the Laboratory campus. As part of the project, CEG is consolidating the existing data center into a high-performance Modular Data Center (MDC) which will heighten IT resiliency and security. Additionally, CEG is expanding an existing on-Lab data center to host a number of JPL IT resources and missions. Following completion of the migration, this project will reduce NASA JPL's energy consumption by 3.7 million kWh per year and consolidate NASA's data center footprint, thereby saving \$2.7MM in energy and O&M costs. Additional benefits of the project include increased on-Lab data center capacity, locational redundancy, improved long-term hardware access, low-latency networking, and significant progress made toward NASA's IT- and facilities-related objectives.

CEG is responsible for design and construction of the MDC, which, in addition to the data center, involves installation of a power distribution unit (PDU), an uninterruptible power supply (UPS), and a 400-kW backup generator. On the third floor of NASA's Space Flight Operations Facility, CEG is leveraging existing power capacity to install data center equipment (server racks and in-rack PDUs), high-efficiency cooling equipment, and additional mechanical upgrades. The third-floor expansion also requires the installation of assorted electrical equipment, structural and seismic reinforcement, and fire protection upgrades to prepare for future data center consolidation.

CLIENT

NASA Jet Propulsion Laboratory

LOCATION

Pasadena, CA

FACILITY TYPE

High-Security Laboratory Campus

YEAR

2018

SCOPE & ECMS

- Data center consolidation
- Install server racks, UPS, PDUs, backup generator, and ancillary infrastructure
- Install high-efficiency cooling equipment
- Airside economization
- Utility rate change

PROJECT HIGHLIGHTS

- Annual Savings: \$2,683,781
- Electricity Savings: 3,703,108 kWh/yr

ESTIMATED SAVINGS:

\$50,667,275