Energy touches every aspect of Marine Corps missions and functions. Even short-term interruptions in electric power or disruptions to delivery of fuel or natural gas can have serious consequences on mission readiness and the ability to deploy Marines in support of critical operations. In response, Marine Corps Energy is taking a proactive approach to enhancing the resilience, reliability and security of Marine Corps installations and their utility infrastructure.

Did You Know...

A **MICROGRID** is a small network of electricity users with a local supply source, usually attached to a centralized national grid but functionably independent.

A **SMART GRID** is an electricity supply network that uses digital communications technology to detect and react to local use changes.

Marine Corps Recurit Depot Parris Island has **BOTH**!

The Road to Resilience at Marine Corps Recruit Depot Parris Island

The Marine Corps' Energy Program recently marked the opening of a comprehensive energy resilience and energy infrastructure project at Marine Corps Recruit Depot Parris Island, S.C. The $91 million energy savings performance contract project, features a new combined heat and power plant, full system back-up (power and steam) and on-site generation (renewable and storage) all centralized in a cutting-edge microgrid providing both energy security and resilience to meet Parris Island's mission of "Making Marines."

An Innovative Partnership

Awarded to Ameresco, an energy service company, this state-of-the-art resilience project leveraged private capital through a U.S. Department of Energy contract vehicle, and is the largest energy savings performance contract project completed by the Marine Corps to date.

Ameresco will maintain responsibility for the operation and maintenance of the new energy assets for the next 22.5 years, allowing the current and future commanding officers to focus on other essential functions and critical services, as the energy for the installation is secure and resilient.

*The new **combined heat and power** plant completed at Parris Island, made possible by an energy savings performance contract with Ameresco, can produce 3.5 megawatts of electricity and replaces the aged steam plant on board the installation. Photo by Leslie Irwin.*

Energy Secure Solutions

A major component of the energy savings performance contract involved constructing a new 3.5 megawatt combined heat and power plant above the 100-year floodplain, which also produces 60,000 pounds of steam per hour for the depot's needs. 6.7 megawatts of new on-site solar photovoltaic generation were also installed as part of a solar carport on a large parking lot used for boot camp graduation, and as a 50 acre photovoltaic array on an old airstrip. The energy savings performance contract also includes energy storage in the form of Tesla Powerpacks. The 4 megawatt/8 megawatt-hour battery energy storage system arrangement acts as a smart grid, monitoring peak loads and discharges to the base grid.

All of these technologies were integrated into a new microgrid control system capable of fast load-shedding, ultimately ensuring that power can be made available when and where it's needed under loss of service scenarios.

The 4 megawatt/8 megawatt-hour Tesla battery energy storage system at Parris Island can monitor peak loads and discharge to the base grid as needed. Photo courtesy of Ameresco.

The 5.7 megawatt on-site solar photovoltaic array, placed on the old Parris Island air strip, covers 50 acres. Photo courtesy of Ameresco.

Project Benefits

75% energy demand reduction

25% total water reduction

10 megawatt on-site generation

$6M annual energy savings

The MCICOM Facility Operations and Energy Office (GF-1) works to secure resilient, reliable and efficient energy supplies to support Marine Corps instalations facilities services, and the families of operating forces living on base.

For more information:

mcicom.marines.mil/units/GF-facilities/GF-1-energy