



## Project Highlight

# Portsmouth Naval Shipyard, ME

AMERESCO 

## Portsmouth Naval Shipyard Relies on a Microgrid Solution When Off Is Not an Option

### Technology Type:

Combined Heat and Power Plant | Energy Savings  
Performance Contract | Microgrid Fast Load-Shed and  
Energy Storage System | Operations & Maintenance

### Facility Size

**4M** square feet

### ESPC Energy Project Size

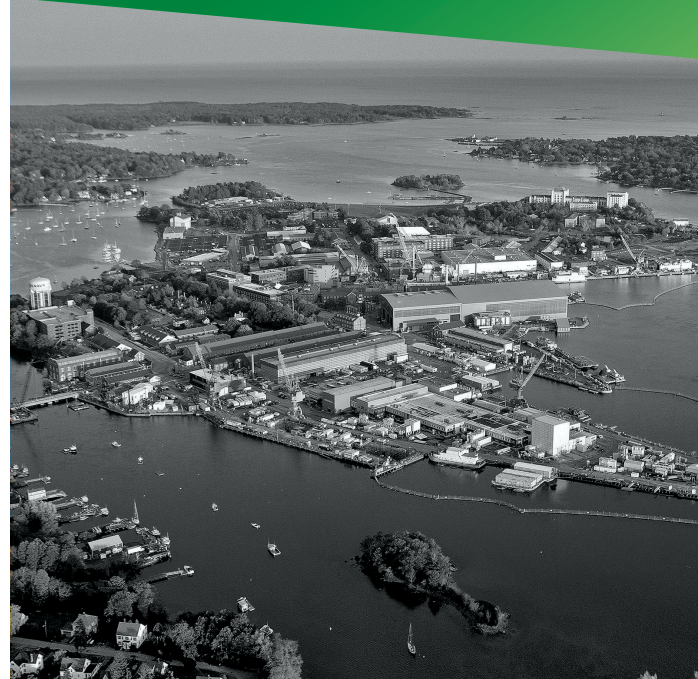
**\$44,000,000** plus \$3.6M  
DOD Grant

### Capacity

**10** MW winter; 5 MW summer;  
14 MW emergency

### Annual Savings (2016)

**\$6,200,000**



### Summary

The U.S. Army Corps of Engineers and the U.S. Navy selected Ameresco to design and install three comprehensive energy conservation projects under an Energy Savings Performance Contract (ESPC), as well as a microgrid solution funded by a grant to demonstrate islanding capabilities which eliminates downtime during a loss of the electric public utility at Portsmouth Naval Shipyard in Kittery, Maine.



## Solution

Ameresco's three phase ESPC project included extensive upgrades to the shipyard's steam, power and control systems. Ameresco also provides the shipyard with commissioning, operation and maintenance of the newly installed equipment.

- Designed and installed comprehensive power plant upgrade
- Large-scale improvements to steam, air, and hot water systems
- 10.4 MW / 280,000 lb/hr combined heat and power (CHP) plant
- Two low-emission 5.2 MW Solar Taurus 60 gas turbines
- Two 70,000 lb/hr heat recovery steam generators
- Two 70,000 lb/hr package boilers
- Two 2 MW emergency diesel generators
- Microgrid control system, new protective relaying with fast load-shed technology
- 500 kW / 580 kWh battery energy storage system (BESS)



“Ameresco and their design and construction teams have done an exceptional job partnering with the Portsmouth Naval Shipyard team to provide this innovative technology upgrade to our existing microgrid.”

*Russell Gagner  
Production Division Director,  
PWD-Maine, NAVFAC MIDLANT*



## Benefits

Improvements made to the Shipyard's various systems have allowed for the elimination of older equipment. With newly installed technologies and equipment, the Shipyard regularly saves on energy and has the ability to operate self-sufficiently if necessary.

- Annual energy savings of up to 43.165 million kWh
- Retired 60-year-old high-pressure steam boilers
- Replaced older instruments and controls
- Repaired and improved compressed air systems
- Upgraded facility lighting
- Enhanced utility system security and reliability
- Protection against energy market pricing volatility
- Cost-effective solutions for military energy security
- Enhanced reliability of electric service to the base
- Provided ancillary services to the electric grid Independent System Operator (ISO)
- Help meet energy, water and carbon reduction goals
- Heating, cooling, electric infrastructure improvements

Ameresco's team of energy experts can assist you in identifying the solution that fits your needs.

For more information about Ameresco and our full-range of energy efficiency and renewable energy solutions, please call **1-866-AMERESCO** or visit **ameresco.com**.

