Department of Navy Update
CDR Schwalbe, Navy Resilient Energy Program Office

Hosted by:

FEMP
Federal Energy Management Program

SOUTHERN CALIFORNIA EDISON®
Enhanced Mission Capability

“Our access to and use of energy must continue to be secure, reliable, and resilient... we must realize the shore is an integral part of this equation since it serves as the backbone from which our forces fly, sail, submerge, and communicate.”

- ADM John Richardson, Chief of Naval Operations
Energy Security Framework

Energy Security

Reliability
Staying online

Resiliency
Recovering from a disturbance

Efficiency
Using the minimal amount of energy needed

Federal Utility Partnership Working Group
November 15-16, 2017  Ontario, CA
**Project Execution**

**Infrastructure Investment via ESPC/UESC 2012-2016**
- DON exceeded the PPCC Goal of $570M:
  - Awarded a total of 39 projects with a capital investment value of $654M
- DON total expected savings:
  - Annual Savings – $52M
  - Annual Energy Savings – 2.3 trillion BTUs
  - Annual Water Savings – 243 million Gals

**Advanced energy security posture via outgrants**
- 700MW / $1.3B of privately funded generation and microgrid assets
- $140M dedicated DON exclusive infrastructure upgrades including:
  - distributed generation, smart inverters, redundant and/or express feeders, switchgear, transformers

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**Leadership Alignment, Bankable Contract Terms, Effective Templates, Reliable Industry Partner, Staff**
Project Development

**Identify Problems: Gap Analysis**
- Utilize multiple inputs to compare energy requirements versus current state to identify energy needs
- Create prioritized list of requirements based on energy needs identified in Gap Analysis

**Identify Solutions: REPO Analysis**
- Assess information from prioritized requirements list in conjunction with market information
- Identify opportunities and solutions to respond to requirements

**Select Solutions: Installation Energy Plans**
- Use REPO solutions to break large scope into single projects, using all energy tools available (REPO Models 1-3, ESPC/UESC, etc.)
- Submit requested projects to EMIG

**Select prioritized and funded projects: EMIG process**
- Installations submit annual project execution request to NAVFAC
- EMIG identifies projects which are planned, prioritized, and funded, to create future project execution pipeline

**EMIG**

**Installation Energy Plan**

**REPO Analysis**

**Prioritization of Requirements**

**DON Energy Security Framework**

**OSD Mission Assurance**

**NAVFAC Executes**
Energy Security Assessment Tool

• Data-driven mechanism to assess and analyze installation energy system performance against energy benchmarks and mission requirements
  – Is the installation energy efficient?
  – Is the installation’s electric service reliable?
  – Are backup generation requirements met?

• Outcomes
  – Energy Security Framework gap analysis
  – Scalable Scorecard
  – Identification of installation level Key Performance Indicators
  – Holistic enterprise-wide performance data
Marine Corps Air Station Yuma

• Installation Mission: Provide aviation ranges, support facilities and services that enable forces to enhance their mission capabilities and combat readiness

• Project Summary:
  – Diesel Generator Peaker Plant and Microgrid
  – 25 MW
  – Arizona Public Service
PMRF, Barking Sands, Kauai

- Installation Mission: The world's largest instrumented, multi-dimensional testing and training missile range.

- Project Summary:
  - Solar Generation with Integrated Storage
  - 19 MW generation and 60 MWh energy storage
  - Kauai Island Utility Cooperative
SUBASE New London

- Installation Mission: As the DON’s primary East Coast submarine base, provide infrastructure for Navy operating forces and is homeport to 5 attack submarines

- Project Summary:
  - Fuel Cell and Microgrid
  - 7.4 MW
  - Partners Connecticut Municipal Electric Energy Cooperative (CMEEC), Groton Utilities and the state of Connecticut
Whole Base Solution

NAVSTA Guantanamo Bay - ESPC

Peak Demand
~20.3MW pre
~17.5MW post

- PP3 Diesel Gensets
- Guantanamo Bay
- Cross-bay power and fiber optic cables are existing
- CCPP
- Plant Control System
- PV with ESS
- PV with ESS
- PV with ESS
- PV with ESS
- PV with ESS
- PP4 Diesel Gensets
- 6 x 3.5 MW
- 4 x 0.95 MW
- PV 0.965 MW (Facility)
- Wind
- Existing Generation (to remain)
- New Generation

= Control System Upgrades Base Wide

Federal Utility Partnership Working Group
November 15-16, 2017 Ontario, CA
Questions?