



DON ANCCR Overview & Demand Response

FUPWG Presentation



Agenda



- Advancing Navy Commodities Cost Reduction (ANCCR) Overview
 - DON Purchased Utilities in Perspective
 - ANCCR Purpose, Mission and Vision
 - ANCCR Strategies to Achieve Goal
 - ANCCR FUPWG Utility Partnerships
- DON Demand Response: Past, Present, and Future
 - DON Demand Response: Past Success
 - DON Demand Response: Select Past and Present Trends in DR Revenue
 - DON Demand Response: Present Projects (ERCOT and HI)
 - DON Demand Response: Present Challenges
 - DON Demand Response: Future Opportunities



DON Purchased Utilities in Perspective



To Support...

320M Sq. Ft. of Buildings



2.2M Acres of Land



270+ Battle Force Ships
3,700+ Aircraft



Requires... Utilities, the Core of the Base Platform



**\$620M
ELECTRICITY**



**\$71M
NATURAL GAS**

**~\$800
Million
Annually**

**\$49M
POTABLE WATER**



**\$60M
SEWAGE**





ANCCR Mission, Vision, and Goals

Vision

To become the federal leader for innovative, integrated utilities procurement

Mission

ANCCR is the community of expertise for DON utilities procurement.

This program serves as an engine of **robust analytical horsepower** that drives cost reduction and process improvement.

We will migrate from a group of geographically-dispersed, locally-focused individuals into a network of globally connected market experts with a **central hub of support**.

ANCCR Goals

Savings Goal:

Identify 5% savings on utility commodity costs by 2019, enabling resource flexibility in support of the DON mission

Program Goal:

Streamline utility commodity procurements and centralize business case analyses to achieve DON savings and revenue



ANCCR Strategies to Achieve Goal



1. Reduce costs

- Analyze utility commodity costs and consumption to reduce costs against business-as-usual scenarios: market hedging, bulk commodity purchasing, best fit tariff, and time of use (TOU) pricing



2. Generate revenue

- Participate in demand response and ancillary service programs to generate revenue, reduce costs, and/or supplement required infrastructure



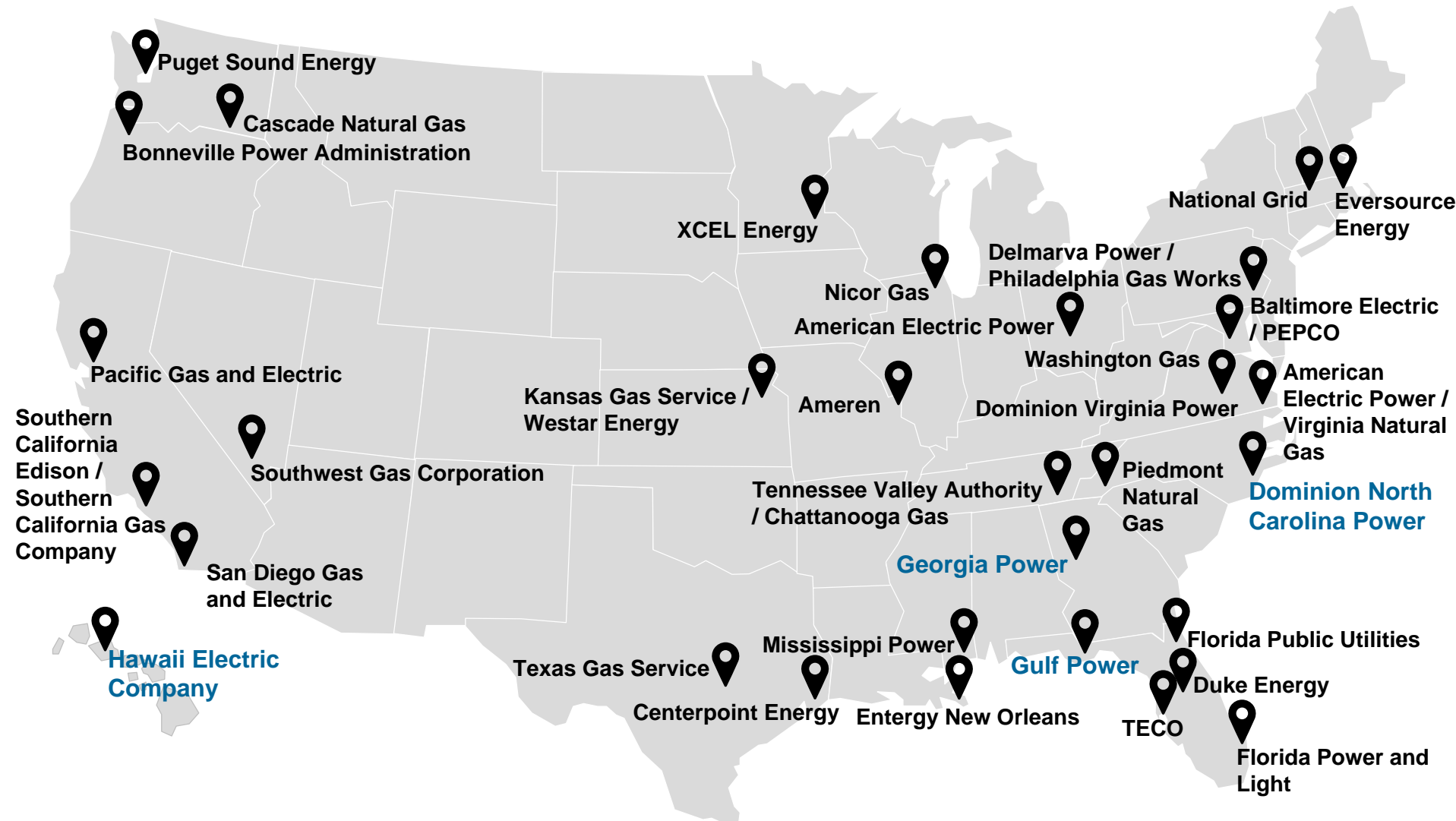
3. Optimize business processes

- Centralize DON utility business case analysis and pursue tax recovery and invoice reconciliation opportunities
- Enhance the Utility Tariff Records Management System (UTRMS), a game-changing business-intelligence tool





ANCCR FUPWG Utility Partnerships





DON Demand Response: Past, Present, and Future



DON Demand Response: Select Past Success



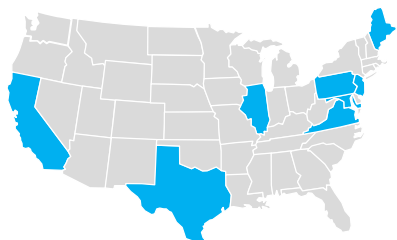
\$13.2M

in total DON cost savings
from Demand Response,
FY2008 - FY2017

18

DON Installations

Enrolled at peak
(FY2015 – FY2016),



DON Installations in

8 States

enrolled between
FY2008 - FY2017

NAVFAC Mid-Atlantic

Demand Response
Data, FY2012 –
FY2015

\$3.4M

in DR Revenue

36.75

Megawatts
enrolled at peak

6

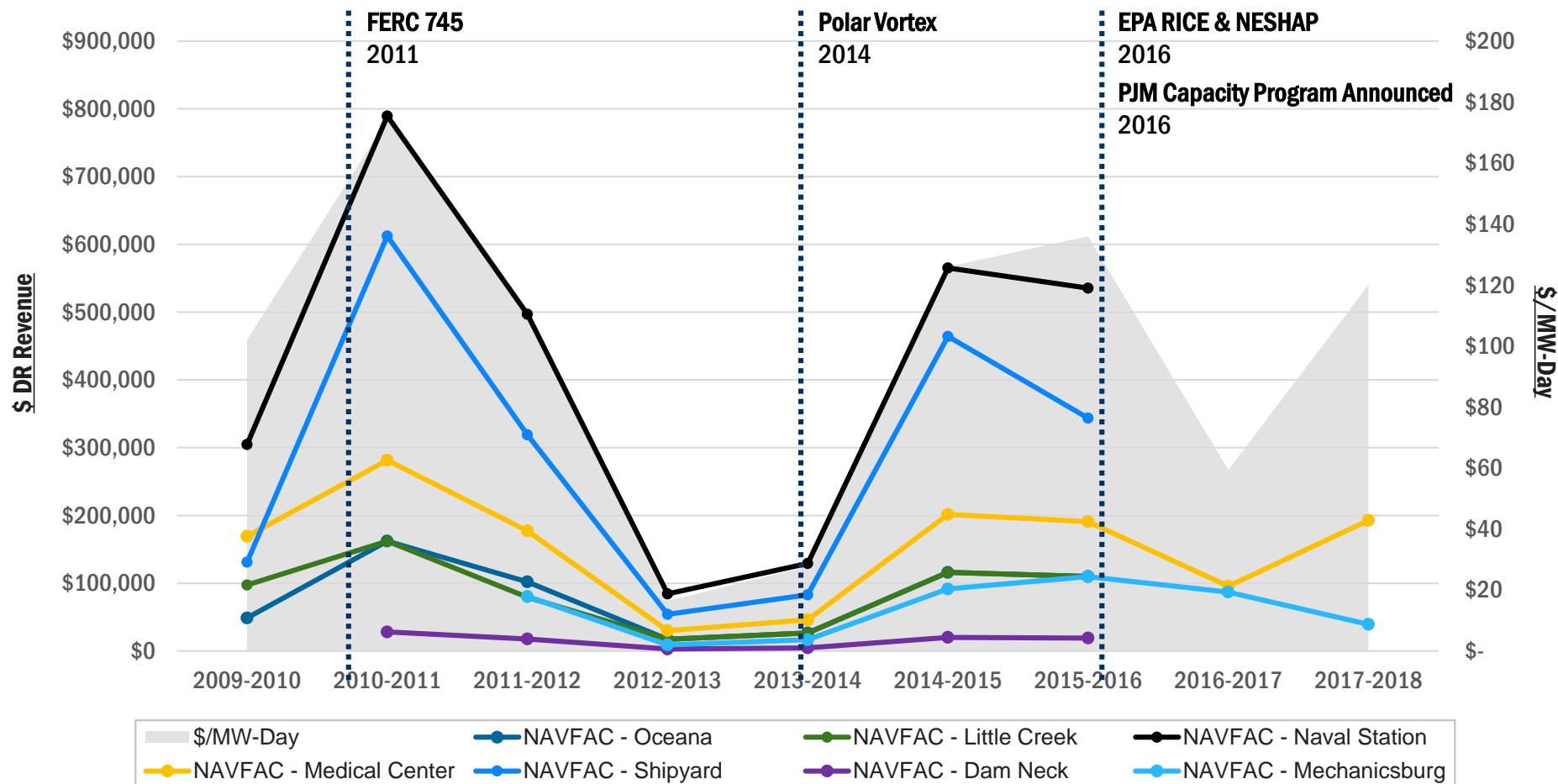
 Installations
Enrolled



DON Demand Response: Select Past & Present Trends in DR Revenue



\$ DR Revenue and \$/MW-Day for Mid-Atlantic Region, by Year



NAVFAC Mid-Atlantic Demand Response revenues have **closely followed annual zone clearing prices**, which have been **impacted by market events** such as FERC 745, the Polar Vortex, EPA RICE & NESHAP and PJM's Performance Capacity Program



DON Demand Response: Present Project (ERCOT)



Demand Response Opportunity

Opportunities available in the Electric Reliability Council of Texas (ERCOT) market with:

- 📍 Naval Air Station (NAS) Corpus Christi
- 📍 NAS Kingsville
- 📍 NAS Joint Reserve Base Forth Worth

Potential Outcomes

Revenue increase of

\$120K

over **5 years**

+

upgraded generator O&M, decreased cost of fuel, and upgraded air permit

ANCCR Involvement

- ✓ **Evaluated programs** against installations' assets, mission and behavior
- ✓ **Coordinated with DLA-Energy** to issue RFP and enter negotiations with a responsive curtailment service provider (CSP)

Status and Lessons Learned

- **Combined portfolio approach** can increase value to CSP
- **Next steps**
 - Evaluate revised requirements based on lessons learned
 - Identify associated costs for fuel, permits and/or generator upgrades



DON Demand Response: Present Project (Hawaii)



Demand Response Opportunity



Partnering with Hawaiian Electric Company (HECO) to develop and opportunity for DOD DR participation in their service territory

Potential Outcomes

Estimated up to

\$50K

to apply as **credit** to offset utility bill

+

Possible integration with generators and SCADA microgrid at JBPHH

ANCCR Involvement



Evaluating requirements against installations' assets, mission and behavior



Coordinating with OSD, DLA-Energy and HECO to inform HECO's developing program and maximize DoD/DON participation

Status and Lessons Learned

• Next Steps

- Solidify requirements for pilot participation and ensure stakeholder concurrence
- Coordinate with HECO to ensure participation and revenue are commensurate with effort



DON Demand Response: Present Challenges



Internal

- **Asset and Infrastructure compliance** with new RTO/ ISO and EPA requirements
- **Cybersecurity risks** stemming from increasingly connected DR programs
- **Additional burden on Blue-Collar Workforce** to support DR in addition to maintaining facilities and infrastructure to support installation mission

External

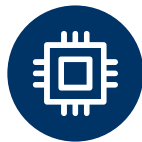
- **Market fluctuations** in DR availability and capacity price
- **Increased DR participation requirements** for capacity, reliability, and seasonal availability
- Coordination of **non-uniform rules and requirements** across regions
- **Increased environmental considerations** and requirements



DON Demand Response: Future Opportunities



Identify **integrated assets** with Supervisory Control and Data Acquisition (SCADA) Systems



Partner with the **Smart Grid program** to take advantage of technologies associated with microgrid roll-out

- Mid-Atlantic, Southwest, and Hawaii present near-term opportunities



Consider **other generation options** in addition to back-up generation capacity

- Opportunities exist to utilize on base co-generation/chiller facilities that can easily adapt to alternate setbacks
- Vehicle-to-grid (V2G) charging pilot demonstrations are being implemented for non-tactical fleets



Focus attention on **international markets**

- Japan opened a new DR market in 2017 called the “NegaWatt Market”



Questions?



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