



# Naval Base Ventura County Energy Program



Joint Hearing: Senate  
Committee on Veterans  
Affairs and the Senate  
Select Committee on the  
Environment, the Economy,  
and Climate Change

*27 September 2012*

*California State University,  
Channel Islands*



# BLUF: Bottom line, up front

- Navy energy goals are ambitious but reachable.
- Naval Base Ventura County is an Energy Showcase Base.
- NBVC is meeting or exceeding goals in several categories.
- NBVC is pouring millions of dollars into energy efficiency.
- State and federal partnerships are key.



# Energy Showcase Program

- NBVC - Navy Energy Showcase Base for the West Coast
  - CBC Port Hueneme established in 1995,
  - NAS Point Mugu added 1998
- Installation and testing of new and emerging technologies, monitoring performance and sharing “lessons learned” with the Navy



Navy's Energy and Sustainable Design  
Demonstration Facility,  
NBVC Port Hueneme





# Navy Energy Goals

Per EO 13423



Warehouse Bldg. 401  
NBVC Port Hueneme  
195 kW Photovoltaic System  
Annual output: 415,300 kWh  
Saves Navy \$49,000 annually

- Reduce:
  - energy consumption 30% by 2015.
  - water consumption 16% by 2015.
  - petroleum use in government vehicles 2% annually through 2015.
- Increase
  - alternative fuel consumption at least 10% annually.
  - purchase of alternative fuel, hybrid, plug-in hybrid and electric vehicles when commercially available.
- Purchase 50% of power from “renewable” power generation plants (in service after 1 January 1999).



# Navy Energy Goals

Per EO 13423

- Buildings: Construct/renovate in accordance with sustainability strategies, including resource conservation, reduction, and use; siting; and indoor environmental quality (per 2006 *"Federal Leadership in High Performance & Sustainable Buildings"* MOU).
- Procurement: Expand purchases of energy-efficient and environmentally-sound goods and services, including:
  - bio-based products,
  - Energy Star® and
  - Federal Energy Management (FEMP) recommended products

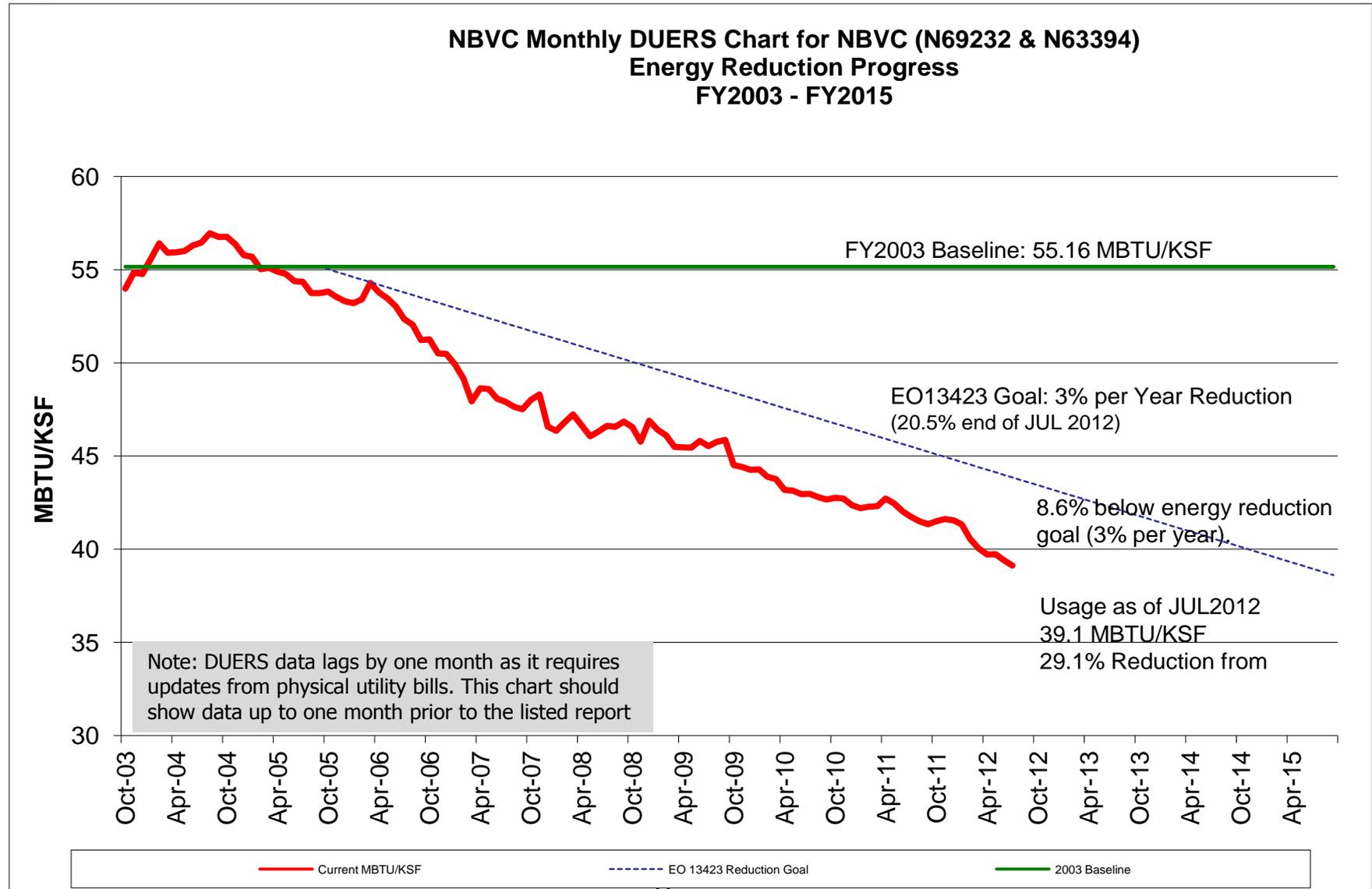


Seabee Museum, NBVC Port Hueneme  
LEED-NC Silver Certified 2010



# NBVC Energy Usage Status Update

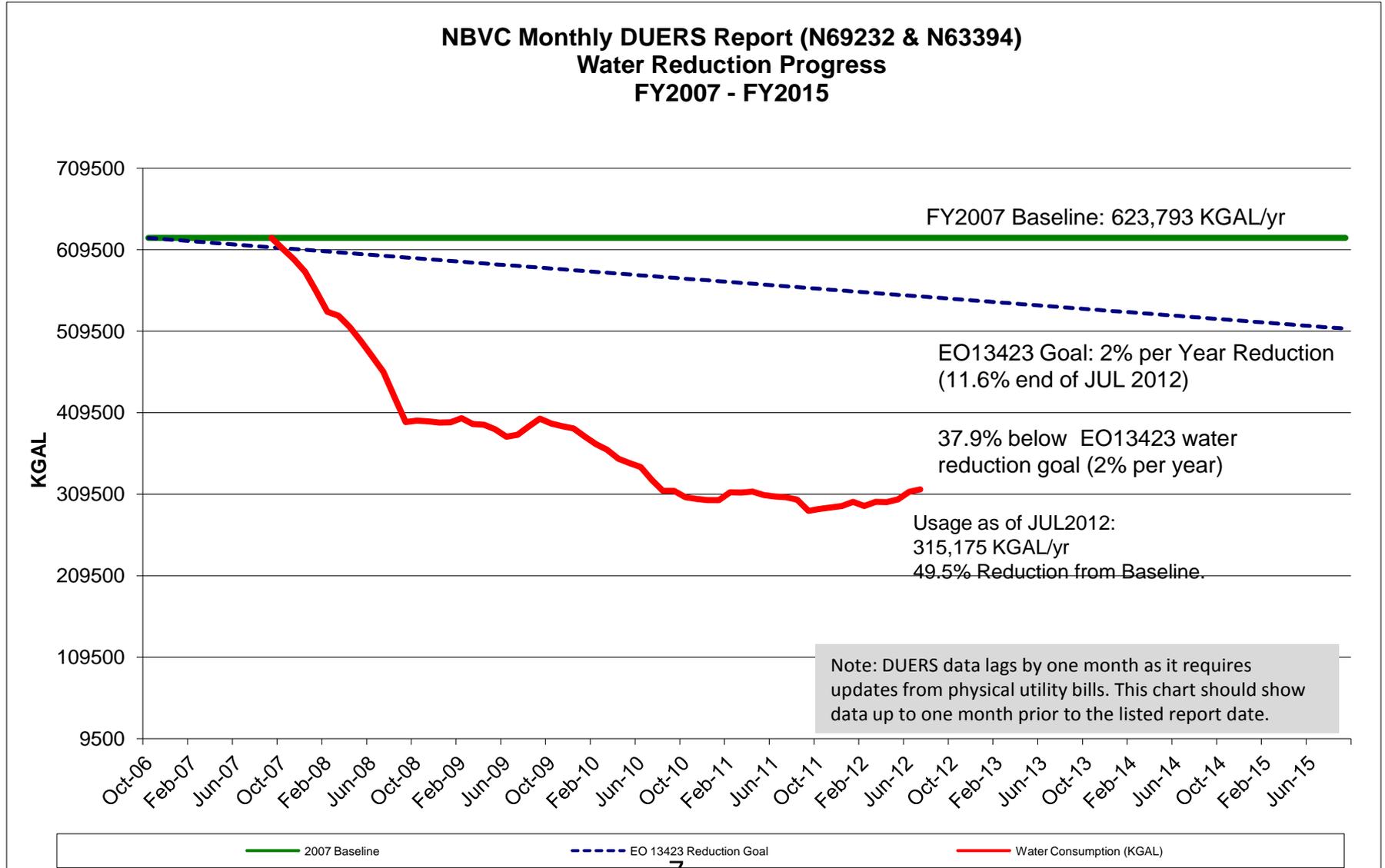
**NBVC Monthly DUERS Chart for NBVC (N69232 & N63394)  
Energy Reduction Progress  
FY2003 - FY2015**





# NBVC Water Usage Status Update

**NBVC Monthly DUERS Report (N69232 & N63394)  
Water Reduction Progress  
FY2007 - FY2015**





# Project Funding Sources

- Energy Conservation Investment Program (ECIP) Projects – Funded by Congress, must compete to receive.
- American Recovery and Reinvestment Act (ARRA).
- Utility Energy Services Contracts (UESC), and Energy Savings Performance Contracts (ESPC) - Financed.
- Restoration & Modernization – Energy (RMe)
- Environmental Security Technology Certification Program (ESTCP)
- Locally (NBVC) Funded Initiatives.
- Fast-Payback Projects.



# NBVC Energy Projects Summary

\* Projects Executed from FY2005 – FY2012

<b>FUNDING TYPE</b>	<b>PROJECT COST (\$ Million)</b>	<b>ANNUAL COST SAVINGS (\$ Million)</b>	<b>ANNUAL ENERGY SAVINGS (MBTU)</b>	<b>ANNUAL WATER SAVINGS (KGAL)</b>
<b>ECIP*</b>	<b>29.36</b>	<b>3.48</b>	<b>105,212</b>	<b>340,394</b>
<b>ARRA*</b>	<b>20.59</b>	<b>1.04</b>	<b>22,433</b>	<b>9,931</b>
<b>UESC*</b>	<b>21.08</b>	<b>1.42</b>	<b>60,208</b>	<b>32,604</b>
<b>RMe*</b>	<b>8.37</b>	<b>1.50</b>	<b>33,009</b>	<b>34,200</b>
<b>NBVC*</b>	<b>2.99</b>	<b>1.24</b>	<b>31,643</b>	<b>72,315</b>
<b>PROPOSED (FY2013 – FY2015)</b>	<b>17.38</b>	<b>2.33</b>	<b>54,588</b>	<b>35,750</b>
<b>FY2005 – FY2015 TOTALS</b>	<b>99.77</b>	<b>11.01</b>	<b>307,093</b>	<b>525,194</b>



# LED Lighting Installations



EXWC Bldg. PH1000 Lobby ↑



Bachelor Quarters Bldg. PH1435 ↑



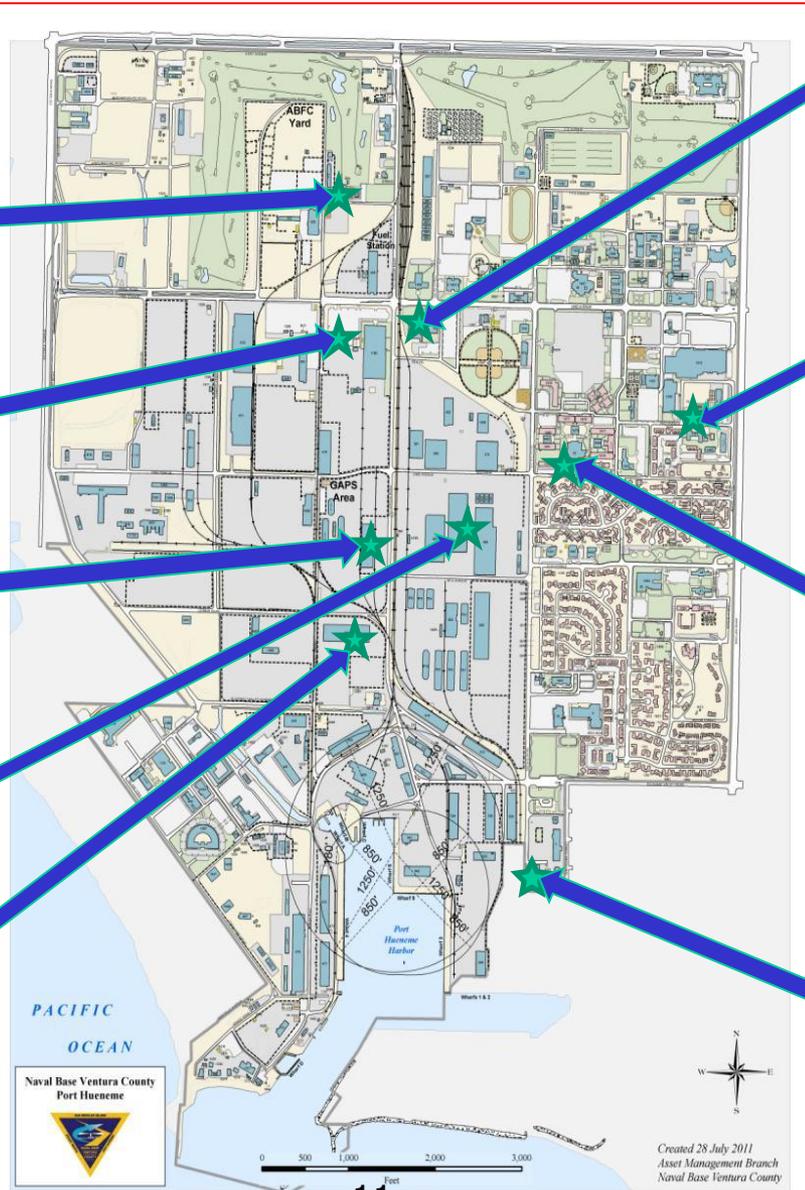
↑ 23<sup>rd</sup> Avenue, NBVC Port Hueneme



NEX Gas Station, NBVC Port Hueneme



# NBVC PV/Solar Thermal



Public Works Bldg., PH850  
PV: 22.4 kW, Annual UT Savings: \$6,000

EXWC Carport, PH1100  
PV: 50.5 kW, Annual UT Savings: \$13,360

Warehouse Bldg. PH401  
PV: 195.4 kW, Annual UT Savings: \$53,900

Warehouse Bldg. PH800  
PV: 303.3 kW, Annual UT Savings: \$83,360

Warehouse Bldg. PH806  
PV: 87.6 kW, Annual UT Savings: \$22,120

EXWC Bldg., PH1000  
PV: 27.2 kW; Annual UT Savings: \$7,228

PH & PM (Not Shown)  
Base Pool Patio Structures,  
Solar Thermal : 7,070 MBTU, Annual UT Savings: \$64,000

Proposed:  
Solar Thermal/PV Galley, PH61  
BQ, PH1481 & 1519  
Annual Production:  
Electricity: 50,400 kWh  
Natural gas offset: 882 MBTU  
Annual UT Savings: ~\$14,215

Marine Corps. Reserve Center, PH6  
PV: 24.1 kW, Annual UT Savings: \$5,640



# San Nicolas Island Wind Project

- **Phase I Contracts awarded to construct (7) 100-kW wind turbines**
- Const. start: September 2012
- Const. completion/Start-up: Mid January 2014
- Includes Synchronous Condenser to interface with existing diesel generators
- Install 1-MW Zinc-Bromide battery
- Annual Energy Savings : 23,240 Mbtu
- Annual Cost Savings: \$930,490
- **Phase II: Install (2) 100-kW wind turbines**
- Contract to be awarded end of calendar year 2012
- Annual Savings: 6,952 Mbtu, \$287,535



# Current Energy Projects

- **CoGenera Combined Solar Hot Water/PV Demonstration Project – Galley & Bachelor Quarters, Port Hueneme**
  - Annual Energy Savings: 1,100 Mbtu, \$11,290
  - Construction: Nov. 2012 2-Year Study
- **PV Carport & 10 Electric Vehicle Charging Stations**
  - Construct 30 kW Photovoltaic Carport Bldg. PH1000
    - Power feeds directly into base electrical grid
  - Install (10) Electric Vehicle Charging Stations at Port Hueneme and Point Mugu for Government Vehicles
  - Annual Energy Savings: 190 Mbtu, \$7,228
  - Construction: Early Calendar year 2013



# California and NBVC: Partnering for Energy Security

- The state of California can help the Navy achieve energy security by:
  - Increasing utility incentive rates for photovoltaics
  - Streamlining incentive application process
  - Increasing one-megawatt limitation on self-generation



# Naval Base Ventura County:

- Is a proving ground for emerging energy technologies.
- Meets and far exceeds federal energy reduction goals.
- Paves the way for energy security by implementing alternative power and fuel projects that reduce our dependency on petroleum-based fuel sources.
- Is a strong partner for energy and conservation efforts in SoCal.