

# Two Award Programs Recognize Navy & Marine Corps Energy & Water Saving Achievements

## Back-to-Back Ceremonies Celebrate Winners in SECNAV Energy and Water Awards & FEMP Energy and Water Management Awards

### OCTOBER WAS NATIONAL

Energy Action month and several individuals, teams and installations from the U.S. Navy and U.S. Marine Corps (USMC) were honored for their energy and water saving actions. Two different programs bestowed awards at their respective ceremonies—the Secretary of the Navy’s (SECNAV) Energy and Water Awards (held 3 October 2012) and the Federal Energy Management Program’s (FEMP) Energy and Water Management Awards (held 4 October 2012).

### Energy Intensity, Water Intensity—What Do They Mean?

ENERGY AND WATER conservation progress each are tracked by units of energy or water used per measure of building space. For energy, the intensity metric is million British thermal units of energy (MBtu) per thousand square feet (KSF) of building space. Similarly, water progress is measured as thousand gallons (KGAL) per thousand square feet.

### Secretary of the Navy Energy and Water Management Awards

With its SECNAV Energy and Water Management Awards, the Department of the Navy (DoN) recognizes outstanding commitment to energy and water management by Navy and Marine Corps installations, ships and squadrons.

SECNAV Awards are presented to those commands that have made notable progress toward DoN goals to reduce energy and water consumption, increase use of renewable energy sources, and construct sustainable facilities. The DoN Energy Program evaluates and classifies the overall energy and water management performance of each installation, ranking them according to a system of SECNAV winner, platinum, gold or blue level of achievement. The 2012 awards recognized achievements from Fiscal Year (FY) 2011.

The 2012 SECNAV Award recipients, the highest-ranking commands in each of eight categories, are presented by category.

### Navy Large Shore Installation

#### Joint Base Pearl Harbor-Hickam, Hawaii (JBPHH)

JBPHH achieved energy reduction exceeding the FY 2003 baseline goals, despite inheriting 4,450 thousand square feet of Air Force facilities. Projects JBPHH instituted in FY 2011 included solar photovoltaic (PV), ocean



CAPT. Jeff James, Joint Base Pearl Harbor-Hickam Commander, and members of the JBPHH energy team.



thermal energy conversion, wave energy buoy, seawater air conditioning, and wind and medium temperature geothermal resources. The PV projects included the largest rooftop solar PV in Hawaii, installing 2.5 megawatts of PV arrays on five base facilities. JBPHH also awarded the first ever Joint Service Solar Multiple Award Contract to construct a 10 + megawatt PV array, creating the first Navy 'Net X' community—exporting more energy than it consumes.

### Navy Small Shore Installation

#### Naval Air Station (NAS) Sigonella, Italy

NAS Sigonella reduced energy intensity by 25 percent from the FY 2003 baseline, and water intensity by 20 from the FY 2007 baseline. Energy and water projects included PV, xeriscaping, water reclamation, and solar thermal hot water systems. Four new facilities achieved or exceeded the professional standards of two different organizations:

1. Leadership in Energy and Environmental Design Silver (LEED) Silver requirements
2. 30 percent or more below the American Society of Heating, Refrigeration, and Air-Conditioning Engineers energy baseline

A monthly energy board meeting, attended by the Regional Commander, contributed to base energy awareness and reduction efforts.



Photovoltaic panels at JBPHH.

Naval Air Station Sigonella's Utilities and Energy Management energy team with photovoltaic carport.





Team members from the Camp Pendleton Box Canyon photovoltaic development team at the Box Canyon site.

### Marine Corps Small Shore Installation

#### Marine Corps Logistics Base (MCLB) Albany, Georgia

MCLB Albany reduced energy intensity by 19 percent compared to the FY 2003 baseline. The primary energy consumer is the Maintenance Center, which serves to rebuild and repair combat support equipment. Utilizing the combination of a Power Purchase Agreement to acquire methane gas and an Utility Energy Service Contract (UESC) to install infrastructure and equipment, 1.9 megawatts of renewable electricity generation went on-line. Throughout the base, management and control system



Photovoltaic system at Camp Pendleton.

efficiency and installing metering capabilities. This includes a \$5 million Utility Energy Service Contract (UESC) delivery order awarded in FY 2011.

Overall, NAS Sigonella saved 31 billion Btus and avoided \$35 million in costs.

These accomplishments also were recognized by the FEMP award for individual achievements in FY 2011, summarized later in this article.

### Marine Corps Large Shore Installation

#### Marine Corps Base Camp Pendleton, California

Camp Pendleton improved facility operations and increased renewable energy generation on site using energy management strategy targets. The base reduced energy intensity by 20 percent relative to the FY 2003 baseline. During FY 2011, construction of multiple PV systems increased on site renewable energy capacity to 4.5 megawatts. Over the past decade, Camp Pendleton has invested over \$50 million towards improving energy

A notable PV installation at Camp Pendleton's Box Canyon Landfill, which contributed to these accomplishments, was recognized by a FEMP award, summarized later in this article.



MCLB Albany's Landfill Gas-to-Energy generator produces 1.9 megawatts of renewable electric power and steam by burning landfill gas collected from the Gaissert Road Dougherty County Landfill. MCLB Albany, Chevron and local officials flipped the switch 23 September 2011. The new green technology is the first of its kind within the Department of the Navy.

As part of the ESPC, geothermal heat pumps were installed to use the earth for heating and cooling NUWC Keyport buildings.

Pat Hardesty



upgrades for buildings provide better control of heating and cooling systems. Lighting upgrades such as high output T8 fluorescent lights, occupancy sensors, and day lighting improve energy efficiency and lighting quality.

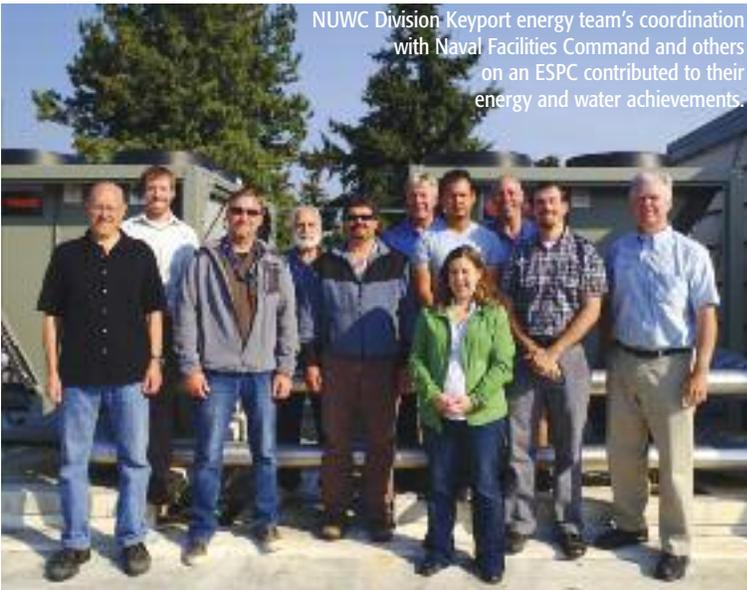
MCLB Albany also was recognized by a FEMP award, summarized later in this article.

#### Other Shore Installation

##### **Naval Undersea Warfare Center (NUWC) Division Keyport, Washington**

NUWC Division Keyport achieved a 40 percent energy reduction from the FY 2003 baseline. The installation went from a 20 percent reduction in FY 2010 to its current 40 percent reduction in FY 2011, doubling the achievement in one year. Some of FY 2011 accomplishments include facility efficiency improvements such as heating and cooling system upgrades, lighting upgrades, as well as boiler replacements that accounted for \$1.4 million in cost avoidance. Additionally, the installation achieved 25 percent water usage reduction by implementing the full suite of best water management practices.

NUWC Division Keyport energy team's coordination with Naval Facilities Command and others on an ESPC contributed to their energy and water achievements.



These achievements also were recognized by a FEMP award, summarized later in this article.

#### Large Ship

##### **USS Makin Island (LHD 8)**

USS Makin Island saved more than 17,000 barrels of fuel in FY 2011 compared to its established historical average fuel usage. This accomplishment is the direct result of command commitment to energy efficiency and ship-wide implementation of Naval Sea Systems Command's



Members of the USS Makin Island energy-saving crew.

(NAVSEA) Incentivized Energy Conservation (iENCON) energy strategies, techniques and training. The use of Ship Energy Conservation Assist Training (SECAT) software and meticulous transit planning greatly enhance operational efficiency. Proactive tools, including Spotlight and Zone Inspections and hourly tracking of potable water usage and production, ensure excessive energy and water usage are aggressively investigated and immediately corrected. Additionally, Makin Island reduces potable water consumption for washing landing craft air cushions by 75 percent.



USS Makin Island (LHD 8).  
MC2 Oscar Espinoza

### Medium Ship

#### USS Philippine Sea (CG 58)

USS Philippine Sea saved nearly 35,000 barrels of fuel in FY 2011 compared to the CG class average fuel usage. As one of the top 25 performing ships, Philippine Sea uses NAVSEA iENCON fuel management practices and techniques, as well as SECAT soft-

ware to increase energy efficiency. Philippine Sea actively implements measures to reduce fuel consumption. During the Atlantic transit to Mayport, Florida, Philippine Sea successfully avoided refueling operations through careful planning and conducting ammunition offload in Yorktown, Virginia. The shipboard comprehensive energy awareness and training program includes iENCON training during Indoctrination, Plan of the Day, and engineering departmental training.

USS Philippine Sea (CG 58).  
MC3 Nicholas Hall



USS Philippine Sea energy engineering crew members.



USS Klakring (FFG 42).  
MC2 Robert A. Wood Sr.



USS Klakring's Commander Canady and members of the energy team.

### Small Ship

#### USS Klakring (FFG 42)

USS Klakring saved 3,258 barrels of fuel in FY 2011 compared to the FFG class average fuel usage. Using a state-of-the-art engineering console trainer and simulations, Klakring capitalized on every opportunity to conduct engineering drills while in port to minimize fuel consumption. During the Pilot Training Program Cycle, Klakring reduced fuel consumption by using optimal transit lanes and speeds, compressed night steam boxes (a reduced size operational area where the ship stays while not under tasking for the evening), and limited dual engine speed runs. Klakring leadership is committed to implementing NAVSEA's iENCON program focusing on energy awareness and training. Utilizing tools from the iENCON Guide, iENCON website and checklist, daily Plan of the Day notes, and shipboard public address announcements, Klakring successfully creates an energy culture from top to bottom.

These SECNAV Award-winning commands executed comprehensive energy and water management programs with senior-level command involvement, well-staffed and trained energy teams, aggressive awareness campaigns, innovative energy and water efficiency measures, attention to using renewable energy, and consistent reduction in energy and water consumption. The award winners receive the privilege of flying the SECNAV Energy flag for one year and receive a cash award.

The Platinum level of achievement recognizes an outstanding energy program and an exceptional year for energy project execution. Commands

receiving the Platinum achievement designation are recognized at the SECNAV Energy and Water Awards ceremony and each receive a \$5,000 cash award. Ten commands were recognized at the Platinum level for 2012:

1. Naval Support Activity Panama City, FL
2. Naval Station Newport, RI
3. Naval Magazine Indian Island, Port Hadlock, WA
4. Naval Air Station Whidbey Island, WA
5. Marine Corps Air Ground Combat Center Twentynine Palms, CA
6. Marine Corps Recruit Depot Parris Island, SC
7. Marine Corps Support Facility Blount Island, Jacksonville, FL
8. USS Bataan (LHD 5)
9. USS Paul Hamilton (DDG 60)
10. USS ELROD (FFG 55)

### Federal Energy Management Program Energy and Water Management Awards

The Federal Energy and Water Management Program (FEMP), a program within the U.S. Department of Energy, works to support Federal agencies in pursuit of their legislated and executive-ordered energy, greenhouse gas, and water goals. The program includes the FEMP Energy and Water Management Awards.

The FEMP awards recognize Federal employees, along with their private sector partners, who successfully develop and implement cost-efficient projects and programs that go above and beyond the federal government's water, energy and fleet management goals. One goal of the awards is to help other agencies and offices leverage best practices and lessons learned to successfully complete their own energy and water efficiency projects. Nominations for the 2012 awards were evaluated within eight categories:

## Gold Awards for Outstanding Energy Programs

**GOLD LEVEL OF** achievement indicates a very good to outstanding energy program. The 2012 Gold level commands, which receive a certificate of achievement, are:

1. Commander Fleet Activities Sasebo, Japan
2. Commander Fleet Activities Yokosuka, Japan
3. Fleet Readiness Center Southwest, San Diego, CA
4. Joint Expeditionary Base Little Creek-Fort Story, Norfolk, VA
5. Marine Corps Air Station Beaufort, SC
6. Marine Corps Air Station Miramar, San Diego, CA
7. Marine Corps Air Station Yuma, AZ
8. Marine Corps Base Hawaii
9. Marine Corps Base Quantico, VA
10. Marine Corps Recruit Depot San Diego, CA
11. Naval Air Facility Atsugi, Japan
12. Naval Air Facility El Centro, CA
13. Naval Air Station Fort Worth Joint Reserve Base, TX
14. Naval Air Station Jacksonville, FL
15. Naval Air Station Kingsville, TX
16. Naval Air Station Lemoore, CA
17. Naval Air Station Oceana, Virginia Beach, VA
18. Naval Air Station Pensacola, FL
19. Naval Air Weapons Station China Lake, CA
20. Naval Base Coronado, San Diego, CA
21. Naval Base Guam
22. Naval Base Kitsap, Bremerton, WA
23. Naval Base Point Loma, San Diego, CA
24. Naval Base Ventura County, Point Mugu, CA
25. Naval Construction Battalion Center Gulfport, MS
26. Naval Facilities Engineering Command Southwest, Reserve Component Command, San Diego, CA
27. Naval Station Everett, WA
28. Naval Station Great Lakes, IL
29. Naval Station Guantanamo Bay, Cuba
30. Naval Station Mayport, FL
31. Naval Station Norfolk, VA
32. Naval Station Rota, Spain
33. Naval Submarine Base Kings Bay, GA
34. Naval Support Activity Andersen, Guam
35. Naval Support Activity Hampton Roads, Norfolk, VA
36. Naval Support Activity Mechanicsburg, PA
37. Naval Support Activity Mid-South, Millington, TN
38. Naval Support Activity Monterey, CA
39. Naval Support Activity Naples, Italy
40. Naval Support Activity Orlando, FL
41. Naval Support Activity Souda Bay, Greece
42. Naval Support Activity, Bahrain
43. Naval Surface Warfare Center Carderock Division, Bethesda, MD
44. Naval Surface Warfare Center Ship Systems Engineering Station, Philadelphia, PA
45. Naval Weapons Station Earle, Colts Neck, NJ
46. Naval Weapons Station Seal Beach, CA
47. Pacific Missile Range Facility Barking Sands, Kekaha, HI
48. Portsmouth Naval Shipyard, Kittery, ME
49. USS Bonhomme Richard (LHD 6)
50. USS Lake Champlain (CG 57)
51. USS Thach (FFG 43)



- Contracting
- Exceptional Service
- Individual Fiscal Year 2011 Achievements
- Program
- Project
- Better Buildings (Fiscal Year 2011)

The Navy and USMC received nine of the 33 awards at the FEMP awards ceremony, a notably strong showing. Their award-winning work is summarized below.

### Contracting

#### Charles Benson

U.S. Department of the Navy  
Naval Facilities Engineering Command (NAVFAC) Northwest  
Silverdale, Washington

Charles Benson has played an instrumental role in awarding nearly \$34 million in UESC projects and energy services for NAVFAC Northwest. When contracting authority for the energy program transferred to NAVFAC Northwest in 2006, Mr. Benson was assigned responsibility for implementing two new UESC basic ordering agreements between the Navy, Puget Sound Energy, and the



Navy and Marine Corps winners at the Federal Energy Management Program's Energy and Water Awards ceremony, 4 October 2012.

Bonneville Power Administration. With no prior UESC experience, Mr. Benson took the initiative to learn about the program, navigate the approvals process, and educate his superiors in order to implement the contracts. Having become the Navy's Northwest Region expert for UESCs, Mr. Benson has also mentored other contracting specialists in UESCs ensuring NAVFAC Northwest's maintains a strong commitment to energy efficiency, water conservation, and renewable energy projects far into the future.

### Exceptional Service

#### Dan Magro

U.S. Department of the Navy  
 Naval Facilities Engineering Command Engineering Service Center (now the Naval Facilities Engineering and Expeditionary Warfare Center)  
 Port Hueneme, California

Dan Magro has worked in the Navy's energy and water program for 17 years and since 1997 he has coordinated nearly \$189.2 million in energy conservation investment program projects and has implemented \$280.5 million in ESPCs.

Together these projects have resulted in lifecycle energy savings of more than three trillion Btu, water savings of 560 million gallons, and cost avoidance of \$663 million. Mr. Magro currently leads a team responsible for all Navy project development and execution. In 2004, he worked with the Department of Energy to develop the current policy that provides credits toward energy reduction goals for cogenerating and installing cogeneration on sites. Due in part to this policy change, the Navy has since installed more than 50 megawatts of cogeneration, accounting for a four percent energy reduction per square foot. He is the Navy's subject matter expert on water savings, and authored a guide that assists installations with managing and conserving their water assets. Mr. Magro's leadership on an



A heat exchanger being installed at the Puget Sound Naval Shipyard. The heat exchanger increases the efficiency of the HVAC system by pre-heating the intake air.

efficiency project resulted in a shortened ESPC process from 18 months to 15 months.

#### Individual FY 2011

##### **Antonino Piluso**

NAS Sigonella, Italy

Antonino Piluso's leadership and long-term vision for renewable energy and sustainability helped NAS Sigonella reduce its energy and water intensity in FY 2011 by 3.5 percent and more than 8 percent respectively when compared with the prior year.

Following his promotion to energy manager in early 2011, he quickly developed a high quality, comprehen-

sive energy program. In his new position, Mr. Piluso supervised a wide range of efforts including a natural gas project that is helping to phase out the Air Station's existing diesel and fuel oil storage system that is used to heat both the facility's domestic and hydronic-systems water. Additionally, a 100-kilowatt PV carport completed in FY 2011 is the base's first large-scale PV project, and is to be followed by a second PV carport and solar thermal hot water projects intended to heat the Air Station swimming pools. Mr. Piluso further supervised a one megawatt PV ground mounted array that is in the final construction

planning stages, along with expanded irrigation services from reclaimed water from the base's wastewater treatment plant. Through Mr. Piluso's efforts, the base is planning more than three megawatts of renewable projects for implementation over the next seven years. He has also developed a robust building energy manager program, initiating the base's advanced metering implementation project.

NAS Sigonella also received the SECNAV Energy and Water Award for Navy Small Shore Installation, summarized earlier in this article.

## Blue Awards for Well-Rounded Energy Programs

**BLUE LEVEL ACHIEVEMENT** recognizes a well-rounded energy program. The following commands will receive a certificate of achievement for the 2012 award cycle:

1. 1st Marine Corps District, Garden City, NY
2. Camp Allen, Norfolk, VA
3. Fleet Readiness Center East, Cherry Point, NC
4. Marine Barracks 8th & I, Washington, DC
5. Marine Corps Air Station Camp Pendleton, CA
6. Marine Corps Air Station Cherry Point, NC
7. Marine Corps Air Station Iwakuni, Japan
8. Marine Corps Base Camp Butler, Okinawa, Japan
9. Marine Corps Base Camp Lejeune, NC
10. Marine Corps Logistics Base Barstow, CA
11. Marine Corps Mountain Warfare Training Center, Bridgeport, CA
12. Naval Air Facility Misawa, Japan
13. Naval Air Station Corpus Christi, TX
14. Naval Air Station Fallon, NV
15. Naval Air Station Joint Reserve Base New Orleans, LA
16. Naval Air Station Key West, FL
17. Naval Air Station Meridian, MS
18. Naval Air Station Patuxent River, MD
19. Naval Air Station Whiting Field, Milton, FL
20. Naval Base San Diego, CA
21. Naval Submarine Base New London, Groton, CT
22. Naval Support Activity Annapolis, MD
23. Naval Support Activity Crane, IN
24. Naval Support Activity South Potomac, Washington, DC
25. Naval Support Activity Washington, DC
26. Naval Support Facility Diego Garcia
27. Naval Undersea Warfare Center Detachment Memphis, TN
28. Naval Undersea Warfare Center Division Newport, RI
29. Naval Weapons Station Yorktown, VA
30. Navy Information Operations Command Sugar Grove, WV
31. Navy Region Center Singapore
32. Norfolk Naval Shipyard, VA
33. Puget Sound Naval Shipyard & Intermediate Maintenance Facility, Bremerton, WA
34. USS Hopper (DDG 70)
35. USS McClusky (FFG 41)
36. USS Peleliu (LHA 5)

## Program

Thomas Caffee

John Payne

Ray Smalling

Commander Mike Tasker

James Van Coney

**U.S. Department of the Navy**

**NAVFAC Northwest**

**Naval Station Everett, Washington**

Through a broad array of partnerships and practices that make them a sustainability leader among Navy installations, Naval Station Everett has reduced its energy intensity by about 28 percent, its water intensity by about 57 percent, and fleet petroleum consumption by more than 90 percent from their respective baselines. Naval Station Everett was the first Navy installation to fully benchmark their facilities in the U.S. Environmental Protection Agency's Energy Star Portfolio Manager. The base has an unprecedented ten Energy Star-certified buildings and two LEED Gold-certified buildings. The Naval Station was also one of the first Navy installations to acquire an advanced metering infrastructure. Eighty-eight percent of Naval Station Everett's vehicle fleet is alternative fuel capable, using 30,000 gallons of biofuels annually. In FY 2011, the site purchased 567-megawatt hours of wind energy, saved 4.4 billion Btu of energy, and conserved four million gallons of water through implemented efficiency projects.

**U.S. Department of the Navy**

**Commander Fleet Activities Yokosuka (CFAY)**

**Yokosuka Naval Base, Japan**

Yokosuka Naval Base, CFAY initiated an electrical demand reduction program in FY 2011, reducing energy purchased from the local Japanese grid by 25 percent during the peak summer period. The three months of summer energy savings equated to the use of 28 billion Btu less than in FY 2010, and translated into more than \$2 million in avoided costs. Program results far exceeded the 15 percent minimum reduction goal required by the Japanese government after the earthquake and tsunami in March. CFAY conducted a focused



Members of the Yokosuka Base Energy Team with system technicians.

*Thomas Bawden*

outreach and education campaign, providing a unified source of energy information that was continually delivered to base personnel through numerous communication channels to ensure maximum campaign exposure. The awareness initiative supplied 15 specific energy reduction steps that assisted members of the community in reducing their peak household and workspace electrical demands. Awareness, individual actions, and communication of new electric load requirements on the part of the entire CFAY community appear to have yielded more than 87 percent of the electric demand reduction. Overall, energy intensity was reduced in FY 2011 by more than 63 percent relative to the FY 2005 baseline.

## Project

Greg Alsin

Phil Beste

Lee Anne Fowler

Nick Rau

Thomas Wellner

**U.S. Department of the Navy**

**NUWC Division Keyport, Washington**

NUWC Division Keyport successfully completed a \$16 million ESPC project in FY 2011 that reduced the command's total energy use by more than 30 percent from the prior year. In total, the ESPC contributes an annual energy savings of more than 77 billion Btu and provides an annual cost avoid-



Several buildings throughout NUWC Division Keyport received upgrades such as automated high-efficiency air conditioning systems and more efficient lighting that helped reduce energy usage by more than 35 percent the first year.

*Pat Hardesty*

Jeff Allen  
Charles Howell  
Sidney Mohseni  
Jorge Perez  
Bernadette Rose

**U.S. Marine Corps  
Marine Corps Base Camp Pendleton,  
California**

Early in FY 2011, Camp Pendleton completed construction of a 1.48-megawatt PV system that generates about 8.5 billion Btu annually and has already saved the base more than \$350,000 in energy costs during its first year of operation. The project was completed at the closed Box Canyon Landfill site without affecting the inactive landfill cap. It represents the largest PV system on a U.S. Marine Corps base and one of the largest in San Diego County. The system consists of 6,300 PV modules constructed on 225 array structures. The PV racks are supported by four precast concrete ballasts with a gravel base foundation and adjustable frame to support the modules. Eight additional PV systems also went on line during FY 2011, bringing the total capacity of new renewable energy on

ance of more than \$2 million. The primary intent of the ESPC was to reduce energy and water use by decentralizing Keyport's aging steam plant, which was prone to steam leaks, poor condensate return, and high maintenance needs. The ESPC supported repair of two significant underground water leaks, dramatically reducing water consumption by approximately 28 percent from the previous year. The project also installed energy efficient infrastructure for 37 buildings and implemented geothermal heat pumps and solar water heating systems that save 650 million Btu in annual renewable energy production. It is estimated that the projects reduce annual greenhouse gas emissions by the equivalent of more than 5,870 metric tons of carbon dioxide.

NUWC Division Keyport also received the SECNAV Energy and Water Award for Navy Other Shore Installation, summarized earlier in this article.

**U.S. Department of the Navy  
NAS Jacksonville, Florida**

NAS Jacksonville completed the largest utility ESPC to date in the Naval Facilities Engineering Command Southeast Region, reducing its energy intensity by four percent and water consumption by 24 percent from the prior year during only four months of operation in FY 2011. This is equal to savings of 34 billion Btu of energy and 79 million

gallons of water, respectively. The \$17.3 million project audited more than 30 facilities and incorporated numerous upgrades including air handler unit ultraviolet lights, motor variable frequency drives, direct digital controls, fuel conversions, chiller retrofits and replacements, and boiler replacements. The venture also addressed heating, ventilation, and air conditioning mechanical opportunities such as chiller retrofits with magnetic bearing compressors. Exemplifying the contract's success, roof-mounted solar water heating systems were installed at several facilities, delivering an average of 3.8 million Btu per day. The first year of renewable cost savings exceeded \$30,000. Once fully implemented, the contract is expected to result in annual savings of more than 65 billion Btu and \$3.3 million, with estimated avoided greenhouse gas emissions of about 9,840 metric tons of carbon dioxide.



Photovoltaic system at Camp Pendleton's Box Canyon Landfill. It represents the largest PV system on a U.S. Marine Corps base and has already saved the base more than \$350,000 in energy costs during its first year of operation.



Representatives of the public/private team that realized the Navy's first landfill gas cogeneration plant at MCLB Albany, Georgia.

the base to 3.12 megawatts. Total annual generation from these systems is projected at 18.7 billion Btu, which will save about \$760,440 in annual electricity costs. Combined with other energy efficiency efforts, the systems helped Camp Pendleton reduce its energy use by more than six percent compared to FY 2010.

These PVs contributed to Camp Pendleton's significant strides in reducing its energy intensity measure, for which it also won the 2012 SECNAV Energy and Water Award in the "Marine Corps Large Shore Installation" category summarized earlier in the SECNAV Awards section of this article.

For additional information on the Box Canyon landfill PV system, see our article entitled "Landfill to Lighting: Closed Pendleton Landfill Becomes Home to Solar Arrays" in the summer 2012 issue of *Currents*.

### U.S. Marine Corps MCLB Albany, Georgia

In FY 2011, MCLB Albany implemented a \$20 million ESPC that delivers process steam and 1.9 megawatt of renewable electric power to the base using landfill gas collected from a nearby landfill. This contract and other renewable energy projects implemented in FY 2011 will save the base more than 135 billion Btu and \$2.2 million annually, with an estimated reduction in greenhouse gas emissions equivalent to 19,300 metric tons of carbon dioxide. The cogeneration plant

consists of a dual-fuel engine generator and a stack heat recovery steam generator capable of delivering 3.3 million Btu per hour of steam from exhaust gas heat. Two dual-fuel boilers also provide a capacity of 10 million Btu per hour of steam production from renewable fuel. The plant can use landfill gas, natural gas, or a blend of the two fuels. As the base's actions exhibit, MCLB Albany is committed to becoming a net zero installation by focusing on energy efficiency and on-site renewable energy development. All renewable energy projects implemented at the base in FY 2011 produce an estimated 16.9 billion Btu, equivalent to more than 10 percent of the installation's total electricity consumption.

In addition to the FEMP award, MCLB Albany won a 2012 SECNAV Energy and Water award in the "Marine Corps Small Shore Installation" category summarized earlier in the SECNAV Awards section of this article.

For more details regarding MCLB Albany's landfill gas-to-energy project, see our article entitled "MCLB Albany Officials Flip Switch for Landfill Gas-to-Energy Plant: First-Ever Facility Will Produce Renewable Electric Power & Steam" in the winter 2012 issue of *Currents*. [↴](#)

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