

FOCUS

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy

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President Obama Signs New Executive Order for Federal Leadership in Environmental, Energy, and Economic Performance

Making a commitment to lead by example, President Obama signed Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, on October 5, 2009. The order links deliberative planning to budget processes, which represents a transformative shift in the way the government operates. The order establishes greenhouse gases (GHG) as the integrating metric to track Federal sustainability, collaborating with neighboring communities, and reducing emissions from the Federal supply chain. It also requires agencies to measure, manage, and reduce greenhouse gas emissions toward agency-defined targets.

Under the new order, Federal agencies are to set a greenhouse gas emissions reduction target for 2020 within 90

days, increase their energy efficiency, reduce petroleum consumption, conserve water, reduce waste, support sustainable communities, and leverage their Federal purchasing power to promote environmentally-responsible products and technologies. Since the Federal Government occupies nearly 500,000 buildings, operates more than 600,000 vehicles, employs more than 1.8 million civilians, and purchases more than \$500 billion per year in goods and services, the new Executive Order provides an opportunity to transform the way the government operates.

Executive Order 13514 requires agencies to meet a number of specific energy, water, and waste reduction targets, including:

- 30 percent vehicle fleet petroleum reduction by 2020;
- 26 percent improvement in water efficiency by 2020;
- Minimized impact on storm water runoff from buildings;
- Implementation of net-zero energy building design by 2030;

- Recycling or diverting 50 percent of their waste by 2015; and
- Meeting sustainability requirements in 95 percent of all applicable contracts.

Within 15 months of the order, agencies are to establish and report to the Council on Environmental Quality (CEQ) Chair and Office of Management and Budget (OMB) Director a comprehensive inventory of absolute GHG emissions across scope one, two, and three emissions for fiscal year 2010. Comprehensive inventories shall be submitted annually thereafter at the end of each January.

The Federal Energy Management Program (FEMP) and the White House Council on Environmental Quality are co-hosting a series of GHG road test meetings to assist Federal agencies in creating a GHG inventory.

For more information or to view Executive Order 13514 in full, please visit <http://www.eere.energy.gov/femp/regulations/eo13514.html>. For more information on GHG please visit <http://www.eere.energy.gov/femp/program/greenhousegases.html>.

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Secretary of Energy
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Assistant Secretary for
Energy Efficiency and
Renewable Energy
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Cover Magnifying Glass Photo:

Building integrated photovoltaic
(BIPV) cool roof, Marine Corps
Base Hawaii, Kaneohe Bay.



The Federal Energy Management Program (FEMP) facilitates the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship.

DOE Enhances Management of Energy Savings Performance Contracts

U.S. Department of Energy (DOE) Assistant Secretary for Energy Efficiency and Renewable Energy Cathy Zoi recently directed FEMP to implement a series of program and contract management reforms for the Department's use of energy savings performance contracts (ESPC) to accelerate energy savings and carbon reduction at DOE facilities. These administrative reforms are intended to improve results and support appropriate oversight for this large and growing sector.

ESPCs allow Federal agencies to make payments over time for energy efficiency and renewable energy projects on Federal facilities installed by an energy service company (ESCO). The Federal Government pays for the improvements from the resulting energy cost savings. When the contract term is complete, the recurring energy and cost savings from these improvements accrue to the agency.

Assistant Secretary Zoi's action follows a strategic review of the ESPC program led by DOE's Office of Internal Review at the request of the Office of Energy Efficiency and Renewable Energy. As part of this review, cross-functional teams visited nine fully operational ESPC projects at seven DOE sites to identify lessons learned and suggest program enhancements.

The results of the review are being incorporated into several specific changes that enhance risk management and improve internal processes. While these reforms will help lower the risks on behalf of the government, they should not delay current implementation of current or future delivery orders associated with current contracts.

Specific objectives of the announced reform effort include:

- Reducing the time to design and award ESPC projects using "fast-track" procedures for projects within a certain scope;
- Increasing the amount of direct price-based competition between ESCOs to improve taxpayer value;
- Establishing a full "life of contract" audit function to ensure all promised savings are being realized and that all parties fulfill their contractual obligations;
- Seeking ways to reduce the borrowing expenses associated with these projects;
- Clarifying procedures for risk apportionment associated with potential energy cost fluctuations; and
- Increasing focus on reduced carbon emissions.

Assistant Secretary Zoi signed a memo on July 17, 2009, directing the Federal Energy Management Program (FEMP) to implement these ESPC management reforms. The full text of the memo is available on the FEMP Web site at:
http://www.femp.energy.gov/pdfs/ESPCS_Reform.pdf.

For more information, please contact Skye Schell of FEMP at schuyler.schell@ee.doe.gov or 202-586-9015.

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MCAS Miramar Implements Model Water Conservation Program

For the last four years, Marine Corps Air Station (MCAS) Miramar has operated as an award winning example of the Marine Corps Energy Program. In 2006, 2007, and 2009, MCAS Miramar received the Secretary of the Navy Energy Award. In 2008 and 2009, the Station received the Department of Energy's Federal Energy and Water Management Award for water conservation, and in 2008 they received the Presidential Award for Leadership in Federal Energy Management.

Mr. Randy J. Monohan, Utilities and Energy Manager for MCAS Miramar, commented on the Station's success: "Our installation is completely engaged. The Commanding Officer's direction is very clear: all personnel aboard the Station must become a part of the daily effort to conserve our nation's scarce resources. These last four years have demonstrated that our efforts are paying off."

One of several areas in which MCAS Miramar has excelled is water conservation. MCAS Miramar is located in San Diego County; an area of California that is at the end of the regional water supply and has been affected by drought. Its location subjects the people of San Diego County to great risk, as potable water is limited during dry years. As such, viable water conservation methods at MCAS Miramar are of the utmost importance.

To this end, MCAS Miramar's strategic vision for wise water utilization continues to be a model for the Department of Defense and the region. In particular, three major efforts have been executed: Station-wide recycled water use, Central Irrigation Control, and the installation of artificial turf.

1. In order to expand the use of recycled water for irrigation throughout the Station, Miramar installed dual piping for toilets and urinals in new facilities. The installation of several miles of major underground infrastructure using 12" purple pipe is quite different than installing smaller 1" surface irrigation lines. This effort requires trenching in major road ways to avoid impacting other utilities. The lasting effect, however, is evidenced by the millions of gallons of potable water conserved annually.
2. Miramar also implemented a station-wide Central Irrigation Control (CIC) system. The system monitors and manages all of the potable and recycled irrigation lines. A major benefit is the ability to automatically shut off any line that indicates water loss from a problem such as a broken line or valve. This prevents wasting water while the problem area is located. The CIC system also allows the maintenance staff to troubleshoot and maintain the irrigation system

from a single location. Retrofitting the existing automatic stand-alone and manual controllers to a central control system has provided immediate water and cost savings. This retrofit provided master valves, flow sensors, gate valves, external antennas, a radio hub, weather station, and other associated equipment to ensure a fully functional central control system.

3. The recycled water and the CIC system are efforts the general public does not see or realize; however, converting four athletic fields to artificial turf is a highly visible water conservation action. The artificial turf fields have provided the largest benefit to the Marines, Sailors, and their families. There are no holes or divots and no dry (or wet) patches of bare earth in place of grass. The field is safer, cleaner, softer, and friendlier than natural grass and provides a consistent playing surface all year long. Maintenance costs are greatly reduced; there are no chemicals or fertilizers to apply, no grass to water and mow, and no down time for reseeding or re-sodding the field. In short, since the turf uses recycled tires for the base and filler, it is a year round ready-to-play surface and an environmentally and ecologically sound replacement for natural grass.

All these projects are remarkable because of the cooperation and teamwork of the MCAS Miramar staff. "The key to MCAS Miramar's success is our people and the great leadership to allow our folks to do their job." said Mr. Monohan.

For more information, please contact Randy Monohan, U.S. Marine Corps, at 858-577-7734 or randy.monohan@usmc.mil.



Artificial turf installed on the MCAS Miramar ball fields saves more than 7,200,000 gallons of potable water and \$72,000 annually.

Water-Saving Technologies That Work: Department of the Navy Shares Water-Saving Tactics

Department of the Navy (DoN) commands take seriously their impact on water: life's most essential ingredient. Naval Facilities Engineering Command (NAVFAC) Engineering Service Center (ESC) took a look across DoN and found some innovative water-wise tactics to share.

- **Smart Landscaping:** Navy Region Southwest (NRSW) has converted large areas of traditionally landscaped lawn to synthetic turf and desert-friendly landscaping. Naval Air Station (NAS) Fallon eliminated 95 percent of its natural turf in favor of desert landscaping as well. NAS Lemoore has either eliminated natural turf or changed the landscaping on more than 30 acres, while metro San Diego area installations have converted approximately 8 acres. Successful landscape alternatives include: desert plants, native plants, rock, gravel, and recycled tires.
- **Irrigation:** In the Southwest, landscaping that is still irrigated primarily uses evapotranspiration (ET)-based central irrigation control systems. The recently-installed systems use on-site weather stations and sensors to measure daily ET data, which is used to determine irrigation run times. The systems have irrigation shutdown capabilities when the weather station detects rainfall and flow monitoring technology to detect leaks and shut down individual valves when necessary. Naval Base Coronado and Naval Base San Diego have increased irrigation efficiency by upgrading irrigation nozzle technology, improving sprinkler location and coverage, and correcting system hydraulics.
- **Other Irrigation Options:** Naval Post-Graduate School Monterey uses non-potable pond water for irrigation and Naval Air Weapons Station China Lake and Marine Corps Base Hawaii both use reclaimed wastewater to irrigate golf courses. Marine Corps Air Station Miramar tied its landscape irrigation system into the city of San Diego's reclaimed water pipeline (please see article on page 3). The NAS Jacksonville wastewater treatment plant's effluent flow is currently discharged to the St. Johns River and used for limited irrigation. A new pipeline, pump station, and two-acre storage pond will provide for zero discharge of treated wastewater to the river and irrigation water for the NAS Jacksonville golf course and other irrigated areas throughout the station.
- **Irrigation Master Planning:** To reduce water consumption, NAS Fort Worth Joint Reserve Base stopped watering lawns and landscaping years ago. Although lawns turn shades of brown during periods of low rainfall, the look is familiar

around town and not considered a problem. In addition to saving on the water bill, the base saved on construction costs for new facilities since sprinkler systems are not required. Irrigation systems in metro San Diego areas are included in the base Geospatial Information System (GIS), along with documentation of plant types. Irrigation schedules are being tied to these GIS areas to allow for better informed decisions on where to cut, alter, or maintain current landscape appearances.

- **Hose Controls:** Best water management practices and drought response measures dictate that hoses must be equipped with pistol-grip or other automatic shut-off nozzles.
- **Low-Flow Shower Heads:** The Navy purchased more than 10,000 low-flow shower heads in FY 2008. Most of the new showerheads are 1.5 gallon per minute (gpm) models installed in NRSW. These showerheads use 40 percent less water than 2.5 gpm Federal standard water-saving showerheads, and were tested extensively to ensure greatest user acceptance. Feedback has been very positive. The payback for 1.5 gpm showerheads is almost immediate in most locations.
- **Faucet Aerators:** These add-on devices mix air with water to reduce the faucet's water flow while improving the effectiveness of the spray for washing hands and other items. More than 5,000, 1.0 gpm faucet aerators were installed last year in the metro San Diego area, primarily in bathroom sinks. Naval Amphibious Base Little Creek installed more than 2,000 aerators with a maximum flow of 0.5 gpm, an adequate flow for hand-washing. Personnel are encouraged to use only the water they need for washing, brushing teeth, etc., but the aerators limit flow whenever the faucet is running.
- **One-Pint-Per-Flush Urinals:** This promising technology has been installed at Naval Base San Diego, Naval Base Ventura County, NAS Patuxent River, and Naval Station Norfolk, among other sites. These urinals look and operate much like low-flow 1.0 gallon-per-flush (gpf) urinals and receive excellent user acceptance while saving seven-eighths gpf. They are maintained the same as conventional urinals, so they avoid the maintenance contract problems sometimes experienced with waterless urinals.
- **Dual Flush Toilet Flushometers:** This feature allows flushing using either the standard 1.6 gallons of water or a reduced flow of one gallon. Although this technology

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**WATER-SAVING TECHNOLOGIES THAT WORK:
DEPARTMENT OF THE NAVY SHARES WATER-
SAVING TACTICS**

(Continued from page 4)

can save water in restrooms without urinals, building occupants must be trained to use the low flush option when appropriate. The new Leadership in Energy and Environmental Design (LEED®) gold-eligible bachelor quarters at Naval Station Everett uses this technology. Savings is more certain with new residential dual flush models because residents can be trained at check-in, and the traditional action of pushing the lever down produces a low-flow flush.

- **Low-Flow, Pre-Rinse Spray Valves for Commercial Dishwashers:** This low-cost, quick-payback measure typically saves half or more of the hot water used to pre-rinse dirty dishes, and has been implemented by several installations in the Southwest. Commercial dishwashing equipment is found in galleys, clubs, child development centers, food courts, and on-base fast-food restaurants.
- **Urinal Flush Valves:** NAVFAC Hawaii retrofitted the flush valves for 1.0 and 1.5 gpf urinals with replacement diaphragms that reduce water consumption to 0.5 gpf. It is wise to check with the urinal manufacturer or test some fixtures to ensure adequate flushing with the reduced water flow, although there have been no complaints at Pearl Harbor.
- **Rainwater Harvesting:** Construction is complete on NAS Jacksonville's first rainwater harvesting system at the new helicopter hangar. The system has a 50,000 gallon storage

capacity, and will use rainwater collected from the hangar roof for the helicopter wash rack and for supplying toilets and urinals throughout the facility.

- **Automatic Freeze Protection Valves:** Intermittent freezing can seriously damage or immobilize equipment, so water lines, pumps, valves, and systems exposed to freezing temperatures require protection. Manually-operated bleeder valves are an option, but this method can waste water and is subject to human error. Naval Base Kitsap commands installed low-cost, easy-to-install automatic freeze protection valves to protect water distribution to piers and dry docks, and are saving more than 230 million gallons of water each year.
- **Leak Detection and Repair:** Water distribution systems can be major sources of water loss. Reduced water loss and lower pumping and treating costs are two benefits of routine leak detection and repair. U.S. Naval Base Guam recently evaluated 150 miles of water distribution lines, and since repairing leaks, the base has saved more than 400,000 gallons of water per day.
- **Metering Data:** The importance of metering data for both buildings and exterior water use cannot be overstated. Naval facilities in the San Diego area use such data to identify and correct consumption anomalies. The combination of good water management and projects such as those described above helped San Diego area Navy facilities cut total water consumption by 22 percent from 2007.

For more information, please contact Rhonda Stewart, Naval Facilities Engineering Command, Engineering Service Center, at rhonda.j.stewart@navy.mil or 360-476-5216.

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U.S. Postal Service Opens New York City's Largest Green Roof

The United States Postal Service (USPS) celebrated the dedication of its first, and New York City's largest, green roof atop the Morgan mail processing facility in midtown Manhattan.

Built in 1933, the 2.2 million square foot facility became a historic landmark in 1986. Its roof was originally constructed to serve as an additional mail processing location, supporting 200 pounds per square foot. When the roof was scheduled for replacement in 2007, it was deemed strong enough to support the weight of the soil, vegetation, and other requirements of a green roof. The plan fit perfectly into the Postal Service's environmental commitment to create sustainable spaces and facilities wherever possible.

The Morgan green roof project began in September 2008 and was completed on budget in July 2009. At 109,000 square feet—nearly 2.5 acres—it is the largest green roof in New York and one of the largest in the country. It is also the largest USPS environmental project to date. Nearly 90 percent of the original roof was recycled and reused on the new roof. The 176 copper column caps, now green due to natural oxidation, are original to the building and continue to define Morgan as a historic building.

The green roof will last up to 50 years, twice as long as the roof it replaced, and is projected to save the Postal Service \$30,000 in annual heating and cooling costs. It will also reduce the amount of contaminants in storm water runoff flowing into New York's municipal water system. The Postal Service projects the reduction of polluted runoff to be as much as 75 percent in the summer and up to 35 percent during the winter months.

Perched seven stories above the city, the Morgan green roof offers a spectacular panoramic view of midtown Manhattan and the northern New Jersey shore. Its 14 orange-hued Brazilian ipe wood benches are made from lumber that has been certified sustainable by the Forest Stewardship Council. Among the native plants and trees used on the roof is Calamagrostis, a lush, maintenance-free grass.

The green roof is part of the Postal Service's successful greener facilities strategy. With a goal of reducing energy use 30 percent by 2015, the strategy includes the use of environmentally-friendly building components; renewable materials; energy efficient lighting and heating; ventilation and air conditioning systems; low-volatile organic-compound parts; low water-use fixtures; and solar photovoltaic systems.

With the largest civilian fleet in the world—nearly 220,000 vehicles traveling more than 1.2 billion miles a year—the

Postal Service is consistently looking for ways to reduce the environmental impact of its transportation fleet. The use of hybrid electric vehicles and other alternative fuel technologies, along with reducing the size of its fleet, will help the Postal Service meet its goal of reducing fuel use by 20 percent over the next five years.

USPS has been honored with more than 70 major environmental awards; including 40 White House "Closing the Circle" awards for environmental stewardship and the 2009 "Climate Change Champion of the Year" award for efforts to reduce greenhouse gas emissions.

For more information about U.S. Postal Service sustainability projects, please contact sustainability@usps.gov.



The Morgan mail processing facility in midtown Manhattan features New York City's largest green roof.

Photograph credit: USPS

Cool Roof Resource Guide for Federal Agencies

The U.S. Department of Energy's (DOE) Federal Energy Management Program (FEMP) compiled a list of "cool roof" resources to help Federal energy managers learn more about cool roof technologies and how they can be deployed. Many types of sustainable roofs exist, including: white roofs, green roofs, and roofs with solar photovoltaic (PV) panels and/or solar hot water systems. Also, the performance of one sustainable roof technology can be optimized when integrated with another sustainable roof technology. For example, the efficiency of a PV system often improves when it is placed above a cool roof.

Cool roofs strongly reflect sunlight (have high "solar reflectance") and efficiently emit thermal radiation (have high "thermal emittance"). By cooling the roof and reducing heat transfer into the building, cool roofs reduce the cooling load of the facility's heating, ventilation, and air conditioning (HVAC) system; thereby saving energy and money while minimizing greenhouse gas emissions.

While cool roofs often reduce cooling loads caused by solar gains on the building roof, it is important to conduct modeling for a specific location to ensure optimum results. For example, cool roofs may actually increase energy consumption in high-altitude or northern-latitude areas. As such, FEMP recommends Federal agencies conduct site-specific modeling during the cool roof assessment phase.

The following resources provide descriptive overviews of cool roof technologies:

- **Cool Roof Questions and Answers:** Answers to common questions on cool roof technologies and deployments prepared by Lawrence Berkeley National Laboratory. Visit http://www.femp.energy.gov/pdfs/coolroof_qa.pdf.
- **Potential Benefits of Cool Roofs on Commercial Buildings:** Conserving Energy, Saving Money, and Reducing Emissions of Greenhouse Gasses and Air Pollutants: Article in the journal, Energy Efficiency, detailing the energy

and environmental benefits of cool roofs written by Ronnen Levinson and Hashem Akbari. Visit <http://www.springerlink.com/content/9r48k34558240825/fulltext.html>.

- **Cool Roofs will Revolutionize the Building Industry:** Fact sheet on cool roof applications within the building industry prepared by Oak Ridge National Laboratory. Visit http://www.ornl.gov/sci/btc/pdfs/env_cool_roofs_fs_apr07.pdf.

The following buying guides provide instructions for the Federal procurement of cool roof technologies:

- **FEMP Energy-Efficient Products:** How to Buy Energy-Efficient Cool Roof Products: Fact sheet containing Federal agency guidelines for buying cool roof products to save operating costs and energy. Visit <http://www.femp.energy.gov/pdfs/roof.pdf>.
- **ENERGY STAR® Reflective Roof Products for Consumers:** Overview of reflective roof products as defined and qualified by the ENERGY STAR program. Visit http://www.energystar.gov/index.cfm?c=roof_prods.pr_roof_products.

The following resources provide additional information on cool roof technologies and deployment activities:

- **FEMP Focus Summer 2008 Issue:** FEMP newsletter covering energy efficiency and renewable energy strategies, tactics, and technologies to meet Federal energy management goals.
- **Emerging Technologies for Energy Savings Performance Contracting (ESPCs) in the Federal Sector:** Report developed for FEMP by the Alliance to Save Energy with energy-saving technology recommendations for ESPC or utility energy services contracts financed Federal facility retrofits.
- **Selling Energy-Efficient Products to the Federal Government:** Reference guide providing basic information on how to do business with Federal agencies regarding energy-efficient products.

For more information, please visit the FEMP Cool Roof Resource Guide for Federal agencies at http://www.femp.energy.gov/features/cool_roof_resources.html



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The National Park Service Benefits from Utility Partnerships in California

In partnership with its serving utility companies, the National Park Service (NPS) in California is steadily reducing its energy use and progressing toward its goal of a carbon-neutral footprint. Steve Butterworth, NPS Regional Energy Coordinator for the Pacific-West region, says these partnerships ensure that NPS personnel have access to utility company staff and to the resources they offer their Federal customers.

NPS sites are taking advantage of public-benefits-funded energy retrofits provided by the utilities at no cost, as well as services such as energy audits, technical and design assistance, and Leadership in Energy and Environmental Design (LEED®) expertise. NPS also plans to use utility energy services contracts (UESC). UESCs are a valuable resource because they provide funding for energy projects; but also because they make it almost effortless for NPS to take advantage of incentives offered through the utilities, says Butterworth.

NPS energy efforts at national parks, monuments, recreation areas, and historical sites throughout California are benefitting from their utilities' assistance as described below.

Southern California Edison (SCE) recently completed lighting retrofits at no cost to the NPS at Joshua Tree, Channel Islands, Death Valley, and Sequoia National Parks; Devils Postpile National Monument, and Santa Monica Mountains National Recreation Area. SCE paid for the relamping projects, including audits, equipment, and installation using about \$155,000 in public-benefits funds. The retrofits will save the park service an estimated 500,000 kilowatt-hours and \$150,000 annually. SCE has also donated photovoltaic (PV) panels to NPS for installation at Joshua Tree and Channel Islands national parks, which will replace diesel generators at these remote facilities.

At Redwood National and State Parks, NPS relied on Pacific Power for assistance with designing the heating and cooling systems for a sustainable new \$10 million maintenance facility.

NPS achieved LEED Platinum certification for Kohm Yah-mah-nee Visitor Center in Lassen Volcanic National Park with help from Pacific Gas & Electric's (PG&E) design professionals. In addition to support with the sustainable design of this facility, NPS is receiving a \$12,500 incentive for participating in PG&E's Savings By Design Program. The visitor center is Lassen's first to be open year-round.

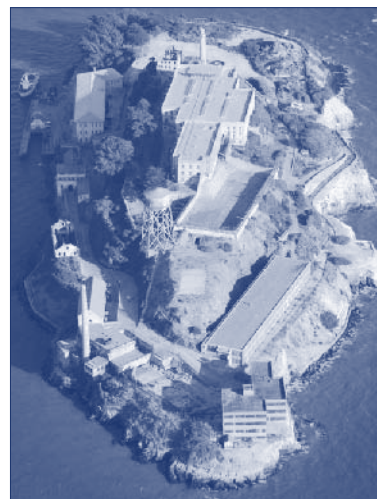
NPS is now ramping up activities with PG&E, whose territory includes the majority of NPS sites in California (See: "Pacific Gas & Electric Hosts UESC Workshop and Strategic Partnership Meeting," *FEMP Focus*, Summer 2009, p. 12). PG&E has agreed



Opened in September 2008, the Kohm Yah-mah-nee Visitor Center in Lassen Volcanic National Park is a LEED Platinum facility.

to provide no-cost preliminary energy audits for all the NPS sites it serves, beginning with Point Reyes National Seashore and the East Bay sites, and moving on to Yosemite and its hundreds of facilities after the required planning is done for work there. The preliminary audits may lead to investment-grade audits and UESC projects at additional sites.

PG&E and NPS are also partnering in efforts to achieve net-zero energy use and zero carbon emissions on Alcatraz Island, part of the Golden Gate National Recreation Area (GGNRA). Alcatraz currently uses about 60,000 gallons of shipped-in diesel fuel annually to run two diesel generators that power the island. NPS is studying its options, partly funded by the American Recovery and Reinvestment Act, for design and compliance work. One possibility, described by Laura Castellini, Environmental Protection Specialist and Sustainability Coordinator for GGNRA, is to combine grid-supplied electricity and photovoltaic (PV) power.



The flat roofs of the cell house (top) and the laundry building (lower right) are visible in this photo of Alcatraz. Net-zero energy use and carbon emissions may be achieved at this historic national park site by installing PV panels on these two building roofs, along with providing grid power through a new cable from the mainland that would surface at the power house (lower left, with the smoke stack).

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LabRATS Prove Occupants Do Matter

What happens to an environmentally sustainable facility when you turn it over to researchers, grad students, faculty, and operations and maintenance personnel who don't operate it efficiently? The answer: it ceases to be a low-impact building.

In 2006, the University of California (UC) responded by forming Laboratory Research and Technical Staff (LabRATS); a grassroots initiative of laboratory researchers, faculty, building managers, and students at UC Santa Barbara and Davis. LabRATS teaches laboratory occupants how to achieve maximum efficiency in their laboratories.

To further their goal, in 2009, LabRATS launched a collaborative practices workshop to educate designers, engineers, safety personnel, operations and maintenance staff, and other laboratory occupants about methods to ensure maximum efficiency from electrical and mechanical systems, and the building as a whole. This workshop can be catered to researchers, designers and operators for a more specific experience. The comprehensive LabRATS approach includes: minimizing solid waste, chemical and water use, purchasing practices, and analytical efficiency.

The International Institute for Sustainable Laboratories (I2SL), the nonprofit co-sponsor of the Laboratories for the 21st Century (Labs21) Annual Conference and Workshops, partnered with the UC system to support LabRATS and its new workshop: "Occupants Matter: Sustainable Design Meets Researchers." I2SL entered into this relationship because it recognized that users play an important role in the success or failure of high-performance laboratories. No other building type depends as heavily on its occupants and users to ensure facility operations safety, efficiency, and integrity as laboratories. Researchers' day-to-day activities, equipment, complex, and ever-changing research objectives directly influence laboratory operations and energy performance.

Using lessons learned from dozens of laboratory assessments, LabRATS has created training materials to help laboratory users improve the environmental performance of their laboratory facilities. LabRATS now shares these training materials internationally and I2SL offers the materials as training modules presented in half-day workshops and full-day training sessions that include a laboratory facility tour. I2SL is working with the co-sponsors of Labs21, the U.S. Environmental Protection Agency, and the U.S. Department of Energy to accept the workshop as part of the Labs21 Workshops suite.

Originally targeted to architects and engineers for new construction, Labs21 has expanded to address retrofit projects, operations and maintenance, finance, and other extreme building types such as data centers, vivaria, high-containment labs, cleanrooms, and healthcare facilities. The addition of the LabRATS training as a Labs21 Workshop will introduce laboratory users to the goals of Labs21 and the users' role in helping to achieve energy efficiency and environmental sustainability for laboratory facilities.

LabRATS received the "Organization Award" at I2SL's first annual Go Beyond Awards, which were presented at the Labs21 2008 Annual Conference in San Jose, California by I2SL and R&D Magazine. The Go Beyond Awards honors individuals, organizations, projects, and laboratory manufacturers that "go beyond" the status-quo to minimize the environmental impacts of laboratory and other high-technology facilities and laboratory equipment.

To learn more about this workshop, including how to register for the course or host the course at your facility, visit the I2SL Web site at: www.i2sl.org/training/index.html. To learn more about LabRATS, visit: <http://sustainability.ucsb.edu/LARS>.

THE NATIONAL PARK SERVICE BENEFITS FROM UTILITY PARTNERSHIPS IN CALIFORNIA (Continued from page 8)

Cables carrying new power lines to the island would be installed under the San Francisco Bay, which would allow the diesel generators to be retired. Solar panels would be installed on the roofs of the cell house and laundry building, the two biggest buildings on the island. The solar panels would produce more than enough energy during the summer to power all the facilities on the island. To get to annual net-zero energy use, NPS would feed excess PV energy to the grid during the summer to offset the grid power used during the darker winter months (Relying on solar power alone is not yet feasible

because engineers have not figured out how to store enough PV energy to power the island over the darker winter months).

NPS values its utility partners because they help the government save energy and money. Butterworth explains, however, that NPS' goals to cut energy use and achieve a carbon-neutral footprint are not ancillary, but central, to the heart of its mission: NPS "preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations."

For more information on utility partnerships, please contact David McAndrew, FEMP, at david.mcandrew@ee.doe.gov or 202-586-7722.



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Federal Agencies Honored with Awards for Excellence in Energy Management

In October 2009, the White House Council on Environmental Quality presented Presidential Awards for Leadership in Federal Energy Management to seven teams for exemplary leadership and efforts in promoting and improving energy use at their agencies to meet the energy management goals of Presidential Executive Orders. The teams included two Navy installations—Naval Base Kitsap (Bremerton, Washington) and Naval Air Station Oceana (Virginia Beach, Virginia), as well as five cross-cutting teams from the Departments of Agriculture, Commerce, Interior, Treasury, and the Environmental Protection Agency. The teams included 81 Federal employees and contractors responsible for estimated annual savings in excess of \$46 million and almost 2.5 trillion British Thermal Units (Btu).

Federal Energy and Water Management Awards were also presented by the Department of Energy to 32 individuals, teams, and organizations throughout the Federal Government for outstanding efforts to implement energy efficiency improvements and innovative strategies at their facilities. These initiatives saved taxpayers more than \$26 million in fiscal year 2008. Winners included employees from: the

United States Air Force, Army, Marine Corps and Navy; the Departments of Commerce, Energy, Interior, and Veterans Affairs; the Environmental Protection Agency; General Services Administration; and National Aeronautics and Space Administration.

Both awards programs are held each year in conjunction with Energy Awareness Month to highlight the critical importance of energy efficiency and renewable resources and Federal efforts to lead by example in energy management. To read more about this year's winners, please visit: <http://www.femp.energy.gov/services/awards.html>. The 2010 Criteria and Guidelines will be posted on this Web site in February 2010, with nominations due in May 2010.

For more information on the Presidential Awards, please contact Hayes Jones at hayes.jones@ee.doe.gov or 202-586-8873.

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U.S. DEPARTMENT OF
ENERGY | Energy Efficiency &
Renewable Energy

The Federal Energy Management Program (FEMP) facilitates the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship.