"Make Energy a Consideration in All We Do"

energyexpress

A product of the Air Force Civil Engineer Center *July 2013*

Air Force's largest solar project breaks ground at Davis-Monthan

Ryan Rovock
Tucson Sentinel

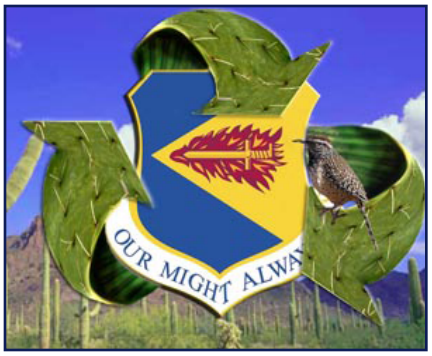
Construction of the largest solar energy array in the U.S. Air Force is underway on Tucson's Davis-Monthan Air Force Base. The project is expected to save the base $500,000 per year in energy costs.

The cost of installing and maintaining the solar array is the responsibility of Sun Edison, the company building the project, said Greg Noble, Davis-Monthan's energy manager.

The 14.5-megawatt photovoltaic array project consists of 57,000 solar panels and will cover two sites on 170 acres of unusable land on base, Noble said. The project is expected to be fully operational by mid-December.

The project was originally expected to be completed in 2011, but saw multiple delays. There were several issues that involved regulatory compliance, project funding and contract issues, Noble said. He said that these types of delays were to be expected in projects of this scale. Noble said the project will produce enough energy to power the equivalent of 2,900 average homes annually.

The base currently pays 8.6 cents per kilowatt-hour for commercial electricity, but the rate for the power supplied from the solar array will be 4.5 cents, Noble said. That renewable rate is projected to increase by 1.5 percent per year.



The solar arrays will be provided and operated by Sun Edison under a 25-year lease. Tucson Electric Power now provides electricity to Davis-Monthan; after the completion of the new solar project the entire base will be drawing power from both Tucson Electric Power and Sun Edison.

The completion of the project on Davis-Monthan will bring the base's total megawatts produced by solar energy to 20.5. Six megawatts of solar energy already helps power on-base housing.

In addition to a lower kilowatt-hour rate, D-M will save money by avoiding some electricity demand charges imposed by TEP.

Commercial centers and other customers using large amounts of electricity are not only charged for the actual amount consumed. Facilities like Davis-Monthan have an additional fee, called a "demand charge," levied on top of the base rate. This charge is based on the highest number of kilowatt-hours used during a 15-minute period during a billing period.

Lowering the "demand charges" for the base by using more solar-generated power will also help save money, Noble said.

The Department of Defense's first-ever energy-efficient aircraft hangar is also planned for D-M.

This is a shortened version of a Tucson Sentinel article published June 14.

A 14.5 megawatt photovoltaic array under construction at Davis-Monthan AFB, Ariz., is not the first large solar project at the base. Davis-Monthan's Soaring Heights Communities (pictured here) feature six megawatts of ground- and roof-mounted solar systems. (Courtesy: www.energyinsight.info)

Air Force responds to shrinking energy budget with ESPCs

Jennifer Elmore
AFCEC Public Affairs

The Air Force Energy Savings Performance Contract program has undergone several key improvements in recent months and is now full steam ahead with an ESPC award in June at Joint Base San Antonio, Texas, and the release of three Notices of Opportunity at Robins AFB, Ga., Peterson AFB, Colo., and Edwards AFB, Calif. The Air Force Civil Engineer Center, which centrally manages the program at Tyndall AFB, Fla., has an additional seven Notices of Opportunity in draft form and plans to release approximately one a month.

ESPCs, and other forms of third-party funding such as Utility Energy Service Contracts, Power Purchase Agreements and Enhanced Use Leases, have become increasingly important with recent budget limitations.

Ken Gray, AFCEC energy director, says for several years the Air Force has been able to use a portion of its Sustainment Restoration and Modernization dollars as an energy focus fund. These dollars were applied only to energy projects that provided the best return through reduced energy use and reduced cost to operate.

"Those funds are going back into a larger pool of SRM dollars, which I suspect over time will become more scarce and difficult to defend against other Air Force needs," said Gray. "As a result, we see a shift in our program over the next several years which would make a larger use of ESPCs and Utility Energy Service Contracts."

ESPCs are used to fund energy conservation projects with no upfront cost to taxpayers; they typically have 15- to 25-year performance periods; and come with complex financial terms. ESPCs are executed through an Energy Service Company, or ESCO, that acquires financing for the infrastructure or equipment system to reduce Air Force energy costs and consumption. The ESCOs recover investment costs, plus overhead and profit, from funds made available via lower utility and operation and maintenance costs. UESCs are similar but are entered into with a utility company and are limited to 10-year terms.

Air Force ESPCs are awarded to one of 16 ESCOs selected through a Department of Energy Indefinite Delivery Indefinite Quantity Contract.

The most recent ESPC to be awarded will retrofit inefficient magnetic ballasts, T12 lamps, incandescent bulbs and high-intensity discharge lamps with T5 and T8 lamps and high-efficiency electronic ballasts in 128 buildings at JBSA. According to Base Energy Manager Andy Hinojosa, the base will receive a rebate from City Public Service Energy in the amount of $675,000. The rebate will be reinvested into the over-all project cost, which will pay for 23 percent of the total project with an electricity savings of $275,000 annually. The $2.9 million project will be repaid over nine years and is expected to be complete by December.

AFCEC plans to award an ESPC at Edwards where a data center consolidation is planned.

"This will be a first for the Air Force," said ESPC Program Manager Les Martin. "We're consolidating data centers at Edwards and seeking to reduce the energy use of our IT systems. We also hope to be able to demolish a telephone switch facility that was constructed in the 1950s."

The goal of an ESPC opportunity at Peterson is to reduce the energy intensity in 40 high-use facilities. Meanwhile, an effort at Robins is more complicated.

"The Robins effort is a little more involved. It will attempt to optimize central plant operations, develop a net-zero dormitory complex, modernize the base-wide energy management control system and retro-commission the top 40 energy intense facilities."

Martin says much of the progress is a result of a rapid improvement event held in November. Since the RIE, AFCEC has rewritten the ESPC Engineering Technical Letter that provides technical guidance to bases and major commands on how to execute an ESPC project; created an engagement policy between the Air Force and ESCOs; and centralized the ESPC contracting process at AFCEC. Click on "video" for more information.

VIDEO

energyquiz *How much annual $avings can you find in this issue?*

Answer on the back page

Schriever AFB institutes summer watering restrictions

Scott Prater
Schriever Sentinel

Since 2007, Schriever Air Force Base, Colo., has made efforts to conserve one of our planet's most precious resources, but this summer, in response to recent drought and higher demand, base leaders have initiated a more ambitious effort.

Lt. Gen. John E. Hyten, Air Force Space Command Vice Commander, has asked installations to re-examine their current processes, practices and activities in an effort to conserve water.

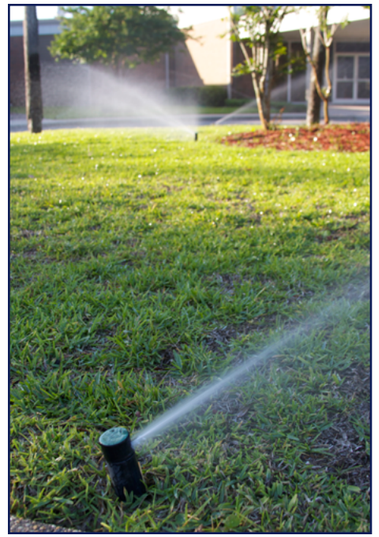
As directed by Col. James Ross, 50th Space Wing commander, Schriever began following irrigation restrictions that Cherokee Water District, the base's water provider, mandated June 6 for its regular residential and commercial customers.

"Being a good member of our community includes being good stewards of the land we occupy," Ross said. "It is the responsible approach to follow the water district's conservation effort."

Throughout the summer months, the base will restrict watering to two days a week, Mondays and Fridays, for a total of three hours before 9 a.m. and after 6 p.m.

"This will affect the landscaped areas on base," said Base Energy Manager Abe Irshid. "The grass should begin to look stressed, but following these restrictions will help us two fold. Not only will we meet Cherokee's consumption restrictions, but this effort will also help us meet AFSPC advisements to reduce our annual water usage."

In 2007, the Department of Defense initiated Executive Order 13423, which requires facilities to reduce water consumption by 2 percent every year through 2015.



Many Air Force bases around the country are saving water by reducing irrigation. For example, Tyndall AFB, Fla., (pictured) has made reducing water and grounds maintenance costs a priority. Leadership has approved a plan to turn off all irrigation systems except at eight locations which will save over 15 million gallons of water, a savings of $30,000 annually, and reduce the frequency of grounds maintenance. (U.S. Air Force photo/Eddie Green)

According to Irshid, Schriever has reduced water consumption approximately 4.5 million gallons in the past 8 month of this fiscal year, saving nearly $32,000.

"Besides instituting watering restrictions, we're starting other conservation measures," Irshid said. "We have a leak detection and repair initiative. We're installing xeriscaping around facilities like the visitors center and low-flow fixtures in facilities. Three years ago, we reduced the base improved grounds from 35 acres to 13.5 acres and we're considering transferring more of our improved land to unimproved land. In addition, to these physical improvements, we're mounting a conservation awareness campaign to inform base personnel of our need to cut consumption."

"We would like to keep moving in that direction," Irshid said. "Our football, soccer and softball fields aren't going to look like golf courses. However, these conservation methods are important for us to follow. We need to continue to conserve water to reach our mandated goals."

Irshid recommends people take shorter showers when they visit the Schriever Fitness Center, turn faucets off while shaving instead of letting water run and report leaking faucets and toilets to maintenance and facility managers.

"The demands on our supply of water increase every year," said Robert Blevins, 50th Civil Engineer Squadron chief of engineering. "The challenge is to learn how to use our water wisely. This challenge is greater now than ever before as our supply of water is shrinking. Droughts further limit access to clean and fresh water."

Continuing to find even small ways to cut demand will go a long way toward helping the base reach its goals.

For more information about water conservation in the Air Force, click here.

VIDEO

Visit us online
facebook.com/AirForceCE
facebook.com/AirForceEnergy
youtube.com/afcivilengineer

Call for greengov℠ Presidential award nominations

Federal civilian and military personnel are invited to participate in the White House Council on Environmental Quality's 2013 GreenGov Presidential Awards. These awards celebrate extraordinary achievement in the pursuit of President Obama's Executive Order 13514 on Federal Leadership in Environmental, Energy and Economic Performance.

The GreenGov Presidential Awards honor exceptional federal personnel, teams, projects and facilities, and programs that exemplify President Obama's charge to lead by example in sustainability. Domestic and international teams, projects, programs, and facilities are eligible along with individuals. Agencies are encouraged to submit multiple nominations.

The 2013 GreenGov Presidential Awards categories are:

1) Sustainability Hero Award - This award recognizes a federal employee who is a sustainability champion and an agent of change within his or her agency. The selected individual will demonstrate a history of outstanding performance in leading implementation of sustainable practices while reflecting a comprehensive approach to energy and environmental management through innovative strategies, practices, and outreach.

2) Green Innovation Award - This award recognizes an innovation or idea with clear potential to transform the federal community's overall energy and environmental performance, in keeping with the goals defined by Executive Order 13514. This award will be presented to an individual or team responsible for the development and execution of a novel new product, project, program, design, or revolutionary idea that facilitates sustainability across the federal government. Award winners will ideally represent efforts in the implementation stage; however, innovation that demonstrates near-term feasibility may also be recognized.

3) Lean, Clean, and Green Award - This award recognizes outstanding organizational achievement in building or fleet energy efficiency or renewable energy development and deployment. The winning project or program will demonstrate a combination of measurable results in energy efficiency (reduced energy consumption), increased use of renewable energy, and reduced greenhouse gas pollution, or decreased petroleum fuel consumption and greenhouse gas pollution reduction.

4) Good Neighbor Award - This award recognizes a federal agency team for its exemplary engagement with local or regional communities to promote one or more of the goals of Executive Order 13514. Nominations in this category should focus on federal agency representatives who are actively involved in local community planning and sustainability initiatives, have established and are pursuing collaborative sustainability goals, and demonstrate success in aligning policies and practices with community partners to achieve those goals. Nominations for this category must include at least one letter of support from a non-federal local or regional community partner in order to be considered.

5) Green Dream Team - This award recognizes exceptional leadership by an interagency green team to effectively place a federal sustainability idea into action. The selected team will have clearly demonstrated that its collaboration efforts were integral to the successful implementation and institutionalization of the idea within its office, agency, or agencies and will highlight collaboration through regional councils, federal executive boards, workgroups or other interagency organizations and teams.

6) Building the Future - This award recognizes a federal civilian or military facility or installation that successfully demonstrates the policy and performance goals of Executive Order 13514 by incorporating sustainable practices and principles into all aspects of their operations. Nominees should highlight significant achievements in building or installation design, operation and management, supply chain management, resource conservation, community engagement, employee involvement, and innovation in order to create a more sustainable facility.

7) Climate Champion Award - This award recognizes a federal agency individual or team that has shown consistent leadership in identifying the impacts climate change will have on the federal community, acting to integrate that information into their work, and sharing their experiences to help others prepare. The award winner in this category will exhibit significant understanding of the impacts of climate change on federal operations, programs and policies and will have openly and positively shared that knowledge with other federal agencies, contributing to the nation's overall climate preparedness. Ideally, nominees also will have helped lead the development and successful implementation of plans to respond to climate change over the near and/or long term.

Nominations must be submitted by a federal employee through the FedCenter website, www.fedcenter.gov between June 14, 2013 and July 12, 2013.

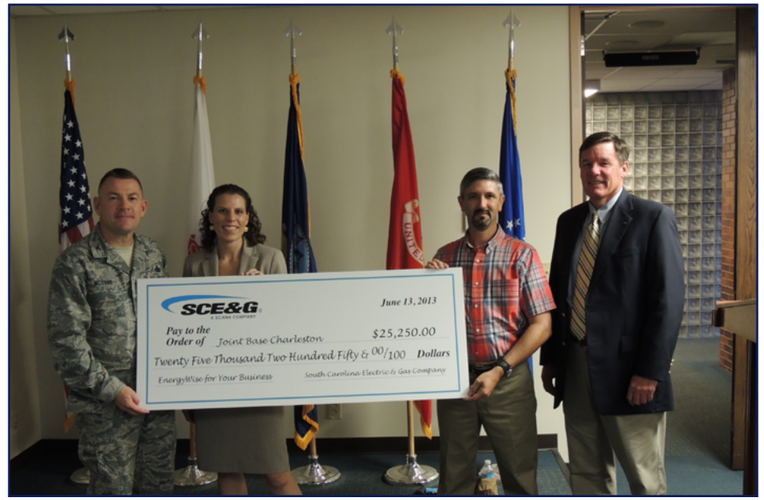
Saving energy pays off!

628th Civil Engineer Squadron

As Joint Base Charleston's Energy Manager, Jeff Morgan, has been actively searching for energy savings opportunities for a while now. Replacing outdated or inefficient equipment, such as lighting and HVAC equipment, is just one of several ways to lower energy consumption in our base facilities.

Though there are many projects planned for future energy-efficient renovations or equipment change outs, a budget shortage has left several projects waiting for future availability of funding. Being resourceful and looking for new ways to fund projects is a key component of the energy manager's position. So along with his resource efficiency manager, Bruce Miller, Morgan and the base energy team contacted SCE&G, the local electric utility provider for Joint Base Charleston to see if there are opportunities for energy-efficient projects.

Fortunately, SCE&G offers financial incentives for energy-efficient projects in renovations, retrofits and new construction applications for commercial customers under SCE&G's EnergyWise® incentive program. This program offers financial incentives and technical assistance to help reduce or offset the cost of energy-efficient improvements, regardless of the size or nature of its business customers. Since the program's inception in October 2010, SCE&G has awarded more than $5 million in rebates to hundreds of South Carolina electric business customers. There are several offerings with incentives, including lighting, HVAC equipment, food service and other high-efficiency equipment.



Col. Richard McComb, Joint Base Charleston commander, and the base energy team receive an incentive check of $25,250 during the Energy Management Steering Group meeting June 13, 2013 at JB Charleston, S.C. (Courtesy Photo)

The JB Charleston Energy Team completed their first project applied for under the EnergyWise® program in May 2013. This project replaced 101 inefficient conventional hot water heaters in various facilities throughout the JB Charleston with state-of the-art energy-efficient hybrid hot water heaters. The new hot water heaters consume half the energy of the older hot water heaters. Because the hot water heaters are much more energy-efficient and provide verifiable savings, they qualified for an incentive of $250 per water heater through the EnergyWise® Program.

In addition to a $25,250 rebate incentive check, this project will reduce electrical consumption 600,000 kWh and save $64,364 annually.

energyquiz

Q. *How much annual $avings can you find in this issue?*

A. *$901,364 annual savings, with ESPCs.*

Reach Back Center
(888) 232-3721
DSN 523-6995
AFCEC.RBC@tyndall.af.mil

The Energy Express is a publication of the Air Force Civil Engineer Center, Tyndall AFB, Fla.

Please send your comments, story ideas, and photos to Jennifer Elmore jennifer.elmore.2.ctr@us.af.mil DSN 523-6572.

AFCEC Director Mr. Joe Sciabica
AFCEC Deputy Director Col Anthony A. Higdon
Director of Energy Mr. Ken Gray, Acting
Public Affairs Ms. Jennifer Elmore
Graphic Designer Mr. Jeff Pendleton