"Make Energy a Consideration in All We Do"

energyexpress

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Making energy a priority

Air Force Space Command takes strides toward energy conservation in 2014

Air Force Space Command has worked with installation and squadron leaders to implement multiple energy-saving projects throughout the command. (U.S. Air Force photo/Duncan Wood/Released)

By Kevin Elliott
AFCEC Public Affairs

The Air Force Space Command energy program has had a very busy 2014.

The command partnered with squadron and base leaders and with the Air Force Civil Engineer Center to make great progress toward reducing the energy intensity of its installations and fleet, exceeding federal mandates.

For starters, the command won a Federal Energy and Water Management Award for its achievements in energy, water and fleet management during fiscal 2013.

The command's energy-winning plan encompassed everything from plans to connect one of its bases in Alaska to the local electrical grid, saving $1.5 million annually, to purchasing and installing 6,600 LED exterior fixtures to replace street and parking lot lights, saving $1 million annually. It also implemented biodiesel throughout its fleet and even launched the federal government's first general-purpose fleet of plug-in electric vehicles.

"The combined efforts of many at space command and the wings contributed to the overall success of the energy program," said Fox Theriault, AFSPC energy analyst. "An example is the installation of LED roadway and street lights at 15 different bases. That took a large-scale effort by many and,

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Light Emitting Diode, or LED, streetlights were installed on installations throughout space command to reduce energy consumption and costs. (U.S. Air Force photo/Duncan Wood/Released)

Los Angeles Air Force Base, California, part of AFSPC, was the first federal facility to replace its entire general purpose fleet with plug-in electrical vehicles. (U.S. Air Force photo/Duncan Wood/Released)

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Two wind turbines provide 50 percent of the power needed to operate the PAVE PAWS radar at Joint Base Cape Cod, Massachusetts. (U.S Air Force photo/Eddie Green/Released)

as we wind up the project, the lessons learned are being passed on to other bases and commands."

The command also invested in renewable energy in 2014. The 6th Space Warning Squadron at Joint Base Cape Cod, Massachusetts, operates the Phased Array Warning System, called PAVE PAWS. The radar operates around the clock, monitoring the entire east coast and 3,000 miles over the Atlantic Ocean. This range requires significant amounts of energy.

In a joint effort with 6th SWS and AFCEC, two wind turbines were installed to capture some of the Cape's substantial wind resources, converting them into enough electricity to provide 50 percent of the radar's energy needs.

Leaders at 6th SWS also partnered with their local utility provider to audit their facilities and, by upgrading chillers and retrofitting buildings with high-efficiency lighting and equipment, are saving an additional $150,000 annually.

Space Command Energy has several additional projects planned for the future. A request for proposals was recently released for a 20-megawatt solar photovoltaic array at Vandenberg Air Force Base, California, which is part of AFSPC.

The array, which will cover 170 acres on a demolished family housing area, is projected to provide 25 percent of the base's energy needs, and add to Vandenberg's energy security and resiliency, two core tenets of the Air Force energy strategy.

The Air Force will reap an energy cost avoidance of $1.3 million annually from the array and reduce greenhouse gas emissions by an estimated 15,800 tons per year.

"Energy is everyone's responsibility."
- Tim Pugh, AFSPC

All federal agencies, including the Air Force, have been mandated to reduce their energy usage. Through innovative partnerships and dedicated leadership, members of space command are "making energy a consideration in all they do."

"Energy is everyone's responsibility," said Tim Pugh, AFSPC energy and utility manager. "Our command's energy strategy not only includes facility and fuels energy but also mission and operational energy. The overall goal is to help the Air Force by reducing our energy intensity any way we can."

Vandenberg captures energy from the warm California SUN

By Kevin Elliott
AFCEC Public Affairs

The Air Force Civil Engineer Center recently released a request for proposals for a 20-megawatt solar photovoltaic array to be built at Vandenberg Air Force Base, California. Upon completion, the array will generate an estimated 37,387 megawatt hours of electricity per year, enough to provide 25 percent of the base's energy needs.

The array, a joint effort between the 30th Space Wing at the base, Air Force Space Command and AFCEC, will span 170 acres on a demolished family housing site, and will be tied directly into the base's power grid.

"The Vandenberg array is a power purchase agreement, which allows us to partner with a private third party developer who will build, own, and operate the system," said Ken Domako, 30th Civil Engineer Squadron chief of portfolio optimization at Vandenberg. "The government has no other financial or operational risks."

A request for proposals was recently released for a 20-megawatt solar array at Vandenberg AFB. Upon completion, the panels are projected to generate up to 25 percent of the base's energy needs. (U.S. Air Force photo)

Under the PPA, Vandenberg purchases electricity produced by the array at a fixed rate for 26 years. The chosen developer will also own and sell the renewable energy credits generated by the project, which further lowers costs for the Air Force.

"The most significant advantage of an agreement like this is the Air Force gets long-term, consistent, secure power," said Dan Gerdes, AFCEC rates and renewables division chief. "The base controls more of its destiny."

Increased mission resiliency and security are also benefits.

"Because the power is being produced on the installation, the base will have a higher degree of control over its power systems," Gerdes said. "In the event of a grid failure off base, Vandenberg will still have some mission capability."

> *"The most significant advantage of an agreement like this is ... the base controls more of its destiny."*
> *- Dan Gerdes, AFCEC*

"Having a large-scale solar photovoltaic system in operation on the installation will provide another method to receive electricity, which will help increase the base's energy security," Domako said.

AFCEC expects the Vandenberg array to create an electricity cost avoidance of $1.3 million annually and to reduce greenhouse gas emissions by an estimated 15,800 metric tons per year, or the equivalent of 3,300 passenger vehicles.

An industry day was held at the proposed site Oct. 15. This allowed businesses competing for the project to physically walk the area and ask questions of base energy representatives before submitting their final proposals.

Once the proposals are received, source selection begins and then a developer will be chosen. Construction is projected to begin in September 2015, with an estimated completion date of June 2016.

AF energy initiatives increase mission readiness

Air Force energy leaders speak about the Force's innovative energy efficiency efforts

By Staff Sgt. Torri Ingalsbe
Air Force Public Affairs Agency

The Air Force's top leaders for energy programs highlighted strides the Air Force has taken in energy conservation, and discussed innovative ideas that will lead to even more cost and energy savings, during the Air Force Association's monthly breakfast Oct. 8, in Arlington, Virginia.

"Energy plays a big part in everything we do," said Roberto Guerrero, the deputy assistant secretary of the Air Force for energy. "For us to succeed in our bottom-line mission, to fly, fight and win in air, space and cyberspace, we have to look at how we expend energy and turn the conservation of that energy into an advantage to roll back into capability."

Energy takes up nine percent of the overall Air Force budget, he explained, and aviation fuel is the largest piece of energy consumption -- totalling about $8 billion. The Air Force has implemented systems designed to offset some of that cost while finding energy from other sources.

"As we speak right now, up at Joint Base Cape Cod, we have a number of giant wind turbines cranking and powering about 50 percent of the operations at that location, including one of the largest, ground-based missile warning radars in the United States," said Miranda Ballentine, the assistant secretary of the Air Force for installations, environment and energy. "The radar requires significant amounts of energy – in fact, $1.6 million a year worth of electricity."

By utilizing wind energy, Cape Cod diversifies its energy dependence and saves the Air Force almost $600,000 a year.

"That's $600,000 a year that we can plow right back into readiness, right back into flight time, right back into training," Ballentine said. "When we build diversification into the system, it really improves the resiliency of that system and reduces the demand for dirtier fuel sources."

Several other bases have implemented programs and processes to conserve energy and reduce the Air Force footprint.

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Photo: Miranda Ballentine, the assistant secretary of the Air Force for installations, environment, and energy, answers questions on the Air Force's environment and energy program during the Air Force Association breakfast series Sept. 23.
(U.S. Air force photo/Staff Sgt. Anthony Nelson, Jr./ Released)

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"The technology that's developed over the years is constantly allowing us to look at the way we do business ... in order to increase our range, reduce our energy footprint and increase our capability," Guerrero said. "All Air Force aircraft now have at least two different types of alternate fuels they can run on."

Other technologies include: electric cars, airframe modifications to increase efficiency, supplementing equipment with lighter options and adjusting flight routes to save fuel. The savings realized by the combined initiatives total more than $100 million.

"We're trying to increase the energy awareness culture and have folks, on their own, give us more bottom-up type of ideas that'll address our energy needs," Guerrero said. "What we want is to be able to turn those energy savings into more modernized structures, better trained Airmen, enhanced capabilities of our aircraft and strategic options for us. We can fly farther and do more than we have in the past. The bottom line—energy savings enhance mission readiness."

Roberto I. Guerrero speaks to attendees during the Air Force Association breakfast series Oct. 8, in Rosslyn, Virginia. Guerrero, a member of the senior executive service, is deputy assistant secretary of the Air Force for energy. He is responsible for providing oversight and direction for all matters pertaining to the formulation, review and execution of plans, policies, programs and budgets for the effective and efficient use of energy to support the global Air Force mission.
(U.S. Air force photo/Staff Sgt. Anthony Nelson, Jr./Released)

Watts Happening

New Energy Leaders Visit AFCEC Tyndall

On Oct. 22, Miranda Ballentine, the assistant secretary of the Air Force for installations, environment and energy, and Roberto Guerrero, the deputy assistant secretary of the Air Force for energy visited AFCEC Tyndall.

Energy Action Month 2014

This year's Energy Action Month was a great success! More than 150 base energy champions, the most ever, participated in the campaign, planning and coordinating base energy days, energy-saving competitions and awareness campaigns. Great job!

AEMR Submitted

Last month, AFCEC submitted the fiscal 2014 Annual Energy Management Report to the office of the secretary of the Air Force for installations, environment and energy.

The report, which is ultimately submitted to Congress, details Air Force efforts in fiscal 2014 to reduce energy intensity and consumption across its installations. All federal agencies have been mandated to reduce their energy intensity 30 percent by 2015.

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

The Energy Express is a publication of the Air Force Civil Engineer Center, Detachment 1, Tyndall AFB, Fla.

Please send your comments, story ideas, and photos to afcec.pa@us.af.mil.

AFCEC Director Mr. Joe Sciabica

AFCEC Deputy Directors Dr. Marilyn Croach
Col. Anthony A. Higdon

Director of Energy Mr. David Bek

Public Affairs Mr. Mike Briggs

Editor Mr. Kevin Elliott

Graphic Designer Mr. Kevin Elliott