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## **Department of Energy recognizes Air Force energy program**

by Jennifer McCabe AFCEC Public Affairs

It is the Oscars of the energy world and the Air Force has stolen the show again. Innovative ideas and procedures for saving facility energy and aviation fuel have earned the Air Force five Federal Energy Management Program awards in 2013, bringing the total to 21 winners in the last four years.

A part of the U.S. Department of Energy, FEMP recognizes individuals and organizations in federal government that make significant contributions to the efficient use of energy and water resources.

Air Force winners for 2013 include: Kelly Jaramillo, United States Air Force Europe Command; David Morin, Laughlin AFB, Texas; Air Combat Command, Langley AFB, Va.; 22nd Operations Group Fuel Efficiency Office, McConnell AFB, Kan.; and Seymour Johnson AFB, N.C. Their combined efforts helped the Air Force save more than \$18.6 million in 2012.

#### **Individual Winners**

USAFE Energy Program Manager Kelly Jaramillo is responsible for a \$145 million utility budget across 10 wings and 114 geographically separated units in Europe. Jaramillo is known for developing innovative ideas, tools and strategies for saving energy, water and money.



MSgt Wesley Ross, USAFE HVAC Program Manager and USAFE Energy Manager, Kelly Jaramillo, are proud of the "Operation COOL MONEY" program they have implemented across the command. It's one of many energy- and water-saving initiatives that earned Jaramillo a 2013 Federal Energy Management Program Award. (U.S. Air Force photo)

"The most important things from my perspective are teamwork, constant communication, and the will to never quit," said Jaramillo.

In FY12, Jaramillo made reducing energy use in military family housing one of her goals. Overseas electricity and natural gas costs the Air Force \$23.7 million in housing annually and military families never see the bill. Jaramillo worked with the housing programmer to create the HQ USAFE Resident Energy Efficiency Program. REEP organizers engaged installation and housing leadership, provided personalized coaching to participating families, installed in-home energy monitors, and employed rewards and recognition programs.

The program began in October (2012), and so far, REEP participants have reduced energy use 25 percent and natural gas consumption 17 percent.

Base Energy Manager David Morin, guided the Laughlin AFB energy efforts, changing the base from being one of the highest energy users within Air Education and Training Command to the lowest. He helped reduce energy use 24 percent and water use 27 percent.

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### **DOE Recognizes...**

STORY CONTINUED FROM PAGE 1 Morin teamed with commanders to minimize irrigated space, maintain a standard office temperature set point, reduce night lighting, train warehouse buyers to identify energy and water efficient products and use advanced meters to identify anomalies and work with facility managers to correct them.

"It took senior leadership support and a coordinated effort from our maintenance shops, energy management control system staff, facility occupants and engineer project managers all looking at how to conserve in their individual areas," said Morin.

He is currently working with the Air Force Renewable Energy Project Development Panel on a 10 megawatt photovoltaic power plant and has received construction funding for a base-wide xeriscape project.



Engineers at Seymour Johnson Air Force Base, N.C., designed and executed a project to build this support center which earned a Gold Leadership in Energy and Environmental Design. The new building consolidates five organizations into a single facility to reduce energy consumption 60 percent and slash energy costs in half. The Department of *Energy will award the project team including:* Environmental Engineer, Brian Joyner; Base Energy Manager, Matthew Latham; Resource Efficiency Manager, Elias Schtakleff; Mechanical Engineer, Jeffrey Howard; and Energy Management Control System Operator, Chris Wheeler; a 2013 Federal Energy Management Program award in November.

#### **Program Winners**

The Air Combat Command facility energy team at Langley AFB managed a program for 16 installations focused on project execution, system optimization and accounting. The program awarded 39 energy projects in FY12, saving \$5.4 million annually. The adjustment and calibration of heating ventilation and air conditioning at 78 major facilities, along with energy management control system repairs and training at 12 bases, brings the total energy saved in FY12 to 538,809 MMBTU. That is enough energy to power 14,000 average homes a year.

The 22nd Operations Group Fuel Efficiency Office at McConnell AFB designed and implemented measures to reduce and eliminate inefficiency in fuel management of the KC-135. One initiative, reducing landing fuel by 5,000 pounds per sortie, saved nearly two million gallons of fuel a year. The team also reduced flap approach profiles,

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From left to right Jerry Garcia, David Morin, Lt. Charles Heim, Perry Benton, Eric Guess, and Lt. Christian Ocasio review plans for a 221-acre xeriscape project at Laughlin Air Force Base, Texas. Base Energy Manager David Morin's leadership on projects such as this one earned him a 2013 Federal Energy Management Program Award. (U.S. Air Force photo/MSgt Michael McComas)



The Department of Energy has chosen the 22nd Operations Group Fuel Efficiency Office at McConnell Air Force Base, Kansas, as a 2013 Federal Energy Management Program Award Winner. The FEO designed and implemented measures to reduce and eliminate inefficiency in fuel management of the KC-135. (U.S. Air Force photo)



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### DOE Recognizes...

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redistributed 100 training flights to simulators, and developed a new training configuration which reduced aircraft basic weight by 1,600 pounds. In total, these efforts established a new culture and saved the Air Force \$4.3 million in 2012 despite a 42 percent increase in sorties.

#### **Project Winner**

The Seymour Johnson AFB energy team supported the design and construction of the Leadership in Energy and Environmental Design Gold level Seymour Johnson Support Center. The building consolidated five organizations into a single facility to reduce energy consumption 60 percent, energy costs by 50 percent and potable water use by 50 percent.

A ceremony for all the winners will be held in Washington, D.C., in November.



The Air Combat Command facility energy team expertly managed a comprehensive program for 16 installations earning them a 2013 Federal Energy Management Program Award. Among its many achievements, the team oversaw the award of 39 energy projects, which are expected to save 450,450 MBTUs and \$5.5 million annually. Pictured left to right: Resource Efficiency Manager, John McDuffie; Energy Projects Manager, Steven White; Energy Management Systems Manager William Turnbull; Program Analyst William Kuster; and Energy Technical Advisor, Dennis Svalstad. (U.S. Air Force photo/Sachel Seabrook)

## **Energy Action Month**

In October 2012, the Air Force held commander's calls, utilized social media and the press, conducted base "energy days," organized school activities, and even hosted "I Am Air Force Energy" fun runs. However, surveys conducted after Energy Action Month 2012 revealed that while many of the Air Force's more senior military and civilian personnel are aware of our efforts, an estimated 75 percent of our junior personnel are not.

In order to have an even bigger impact in 2013, AFCEC has worked with SAF/IEN and SAF/PA on two additional initiatives. • **Expanded Competitions** – With input from the CE community, SAF/ IEN developed competition guides that provide best practices on how to implement five different types of energy competitions at your installation. Along with being a lot of fun, competitions also encourage all Airmen to become more energy aware and reward their efforts to reduce their energy consumption

• Champions Campaign – Acting Assistant Secretary Kathleen Ferguson asked all MAJCOM CVs to assign points of contact who would then identify staff at the Wing/Squadron level to help promote events, competitions, and other initiatives to their colleagues.

#### 2013 Energy Action Month materials

**1.** Unit POC-Champions BBP - this outlines each individual's role in campaign execution, and should answer a lot of your questions.

**2.** 2013 EAM Logo - this was also used in last year's campaign, on everything from PowerPoint slides and coins, to T-shirts and installation marquees.

3. Unit POC planning checklist spread sheet - suggested checklist to help your wing/unit/base POC set up a basic campaign. He/she should tailor it to his/ her unit's needs.

**4.** Unit POC-Execution Plan - a sample MAJCOM/Unit "execution plan." Each should tailor it to his/her unit's needs.

**5.** EAM Activity Ideas - some ideas to add to the wing/base/unit campaign calendar. These are just SUGGESTED ideas, not necessarily required.

6: Draft Emails for your unit/wing/ base POC or Commander to send out to unit personnel at different points during the campaign. 7. Competition Analysis - many units did some GREAT energy competitions last year, so we analyzed each for use this year. This analysis provides details -- it is for situational awareness.

**7a-e:** Competition "guides" each of your wing/unit/base POC's to use -- each document provides basic info about setting these events up, tailorable to individual unit needs.

8. Campaign Metrics - all wing/ base/unit POC's are asked to collect these metrics at the close of Energy Action Month, then forward to YOU, the MAJCOM POC's. We ask that you consolidate and send one spread sheet for your MAJCOM to our office using this email address (IAmAirForceEnergy@ pentagon.af.mil) -- suspense: 30 Nov.

Materials are available on the AFCEC Energy SharePoint: https://cs3.eis.af.mil/ sites/OO-EN-CE-A6/OO-EN-CE-A4/ default.aspx. Materials will also be posted at www.afcec.af.mil.

AFCEC will release more materials in early September including fact sheets, a Commander's Call speech, talking points, an updated video, and more.

# **Expeditionary bases test new energy technology**

by Amy Ausley AFCEC Public Affairs

Saving energy is a requirement not only for brick and mortar bases, but also for expeditionary locations. A joint Air Force/ Army research project to do this has moved into the initial phase of testing in an actual real-world environment in the Southwest Asia Area of Responsibility. The project seeks to save a minimum of 50 percent of the energy required to support Air Force and Army expeditionary bases.

The Air Force Basic Expeditionary Airfield Resources base, or BEAR, program provides expeditionary facilities for up to 3,300 people in austere locations. The base is self-contained and is a major energy user, consuming up to 10.5 megawatts of power and up to 13,000 gallons of fuel a day.

In July 2013, the Air Force and the Army shipped a total of 15 shelters with environmental control units (ECU) and monitoring systems to a base in Southwest Asia, and this week a team deployed to set up the systems and begin the evaluation in the expeditionary setting. Eight of the shelters will be occupied; four Air Force and four Army, and the other 7 will be unoccupied to provide baseline data.

The tents include new technologies such as heat reflective flys that block the sun's heat, photovoltaic panels to generate power, insulated liners and vestibules with hard doors, as opposed to zippered tent flaps, to help with the insulation process.

The project has created a lot of interest at the test base according to Capt. Clark Smith, deputy commander for the 386th Expeditionary Civil Engineer Squadron. "There has definitely been a lot of curiosity leading up to the team's arrival and as the shelters have gone up, both by the Airmen assisting with the set-up



An Airman secures the lines on an energy-saving tent being tested at a base in Southwest Asia. The tents are outfitted with various technologies like photovoltaic flys, insulated liners and more efficient environmental control units and will be monitored to see how they perform in a real-world environment. (U.S. Air Force photo/MSgt Christopher Campbell)

and others who have heard about them," said Smith. "I started my career at the Air Force Operational Test and Evaluation Center so I'm glad they are bringing these [tents] here to get feedback from the AOR."

Rod Fisher, expeditionary modernization engineer at the Air Force Civil Engineer Center, says this test will show exactly what the updated tents can do.

"It's a much harsher environment than in the states. But that is the actual environment the shelters have to survive in and we need some real-world data," said Fisher. "We'll be looking at the efficiencies, how cool we can keep the shelters, how much power it demands in that environment, and we'll get feedback from the guys that are living in the tents." Smith says the location is the perfect environment because the new tents will get a side-by-side comparison with the base's existing tents. "Expeditionary shelters must withstand high temperatures, strong winds and blowing dust and we have plenty of that here," said Smith. "I'm interested in feeling the difference from the new shading and insulating methods and in how functional they are from a user perspective."

For the last five years, the Air Force and the Army have been researching expeditionary energy-saving techniques through the Net Zero Plus Joint Capability Technology Demonstration. The current project is funded by the Department of Defense, and combines all the lessons learned while continuing to research new technologies.

Fisher says one of the biggest issues is the energy efficiency of the small tent shelters. Currently, around 60 percent of daily power needed at a BEAR base goes towards cooling the tents. It takes one ECU to cool or heat one tent.

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### **New Technology...** STORY CONTINUED FROM PAGE 4

"Improving shelter efficiency means we can now cool two shelters with one ECU. That allows us to leave about 125 ECUs and the associated power distribution equipment at home for a 3,000-person base. It saves us about 2.25 megawatt of power. Switching to a more efficient ECU can provide another megawatt of savings," Fisher said. "Since we have to shade the tents anyway to improve the energy efficiency, we put solar panels on some of them to generate power, about a megawatt of power for a full base."

All of it equates to fewer ECUs, which means less fuel is needed and therefore. fewer fuel convoys.

"As engineers, we are in tune with the resources and manpower required to get a base established from the ground up. With these shelter systems we can decrease the number of AC units we transport, set-up, and maintain," said Smith. "That means fewer man hours as well as significantly lower power requirements, all things that make engineers and logisticians lives' easier and saves big bucks for the taxpayers." According to Fisher, reducing the energy demand at a BEAR base is a cost-saving measure, but ultimately, it saves lives. "We lose one person for every 29 convoys delivering fuel to these remote locations," said Fisher. "One of the biggest issues is keeping the troops out of harm's way by keeping them off the fuel convoys."

While the expeditionary testing phase of the project is happening, phase two continues in the states to improve the energy efficiency of the larger tents used in expeditionary settings for maintenance, supply and storage. Testing



Airmen at a base in Southwest Asia erect special tents equipped with new energy-saving technologies. The tents, which include photovoltaic flys, insulated liners and more efficient environmental control units are being monitored in the harsh desert conditions to see how effective they are at saving energy. (U.S. Air Force photo/MSqt Christopher Campbell)

includes more efficient liners, reflective coatings for the tents and adjustable liners that drop down and reduce the ceiling height to limit the volume of air to be cooled.

Phase three will include a followon demonstration in a real world expeditionary environment in the spring of 2015.

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