

"Make energy a consideration in all we do"

ENERGY | express

A product of the Air Force Civil Engineer Center

February 2017

One down!

First panel installed at Eglin's solar farm

By Cheryl Sawyers
Team Eglin Public Affairs

EGLIN AIR FORCE BASE, Fla. -- Blazing a trail to provide clean energy for future generations, Eglin is one step closer to making the 30-megawatt solar array farm a reality.

On Jan. 18, officials from Eglin, Gulf

Power and Coronal Development Services installed the first of 375,000 solar panels that will eventually power more than 4,500 homes in Okaloosa County, or the equivalent of 19 percent of Eglin's annual energy needs.

To illuminate the achievement and demonstrate dreams can come true,

continued on pg. 3

The first of the eventual 375,000 solar panels sits on a rack after a ceremonial initial installation ceremony Jan. 18 at Eglin Air Force Base, Florida. Leaders from the three project partners, Air Force, Gulf Power and Coronal Development Services, were on hand to install the first panel located on the 240-acre site. (U.S. Air Force photo/Samuel King Jr.)

In this issue:

- Solar addition at AF installation housing
- AMRS 2.0 debuts at Eielson AFB
- New AF Energy Flight Plan released
- ... and more!



Air Force installation housing gets an energizing addition

By AFCEC Public Affairs

Rooftop solar panels were recently installed at residential communities on Air Force installations across the United States. Combined, the homes will generate an estimated seven megawatts of energy.

The homes are part of the Air Force Housing Privatization Program portfolio, which is centrally managed through the Air Force Civil Engineer Center. The Air Force established its privatized housing program after Congress passed legislation in 1996, giving the military authority to use private sector expertise and funding to eliminate inadequate housing and improve the quality of life for service members and their families.

AFCEC's partnerships with private project owners allows the Air Force to remain mission focused but still retain housing operation oversight.

"AFCEC's role in the project holds true to our mission of supporting thriving communities, ready installations and resilient energy," said Robert Moriarty, AFCEC Installations director.

In addition to diversifying energy

sources, the program's solar investments will eventually yield savings — money that goes directly back into the project to maintain housing communities, services and programs for Air Force families, said Moriarty.

AFCEC housing privatization program managers monitor all phases of the solar projects, to include serving as a mediator between bases, project owners and outside power suppliers to establish interconnection agreements, said Col. Michael Beach, AFCEC Installations Directorate's chief of housing division.

"We promote, evaluate and approve any renewable energy, energy conservation or energy efficiency projects our project owners want to pursue," Beach said. "Any project that reduces utility costs, improves sustainability and protects the environment is a project worth supporting."

Beach gives credit to AFCEC's business-minded approach to achieve two key Air Force initiatives through the HP program: enhancing installation resiliency through energy assurance and providing quality housing options

for Airmen and their families, today and in the future.

"We review proposals for economic compatibility and feasibility," Beach said. "This ensures financial decisions make sense, not only today but throughout the life of the solar panels and the housing agreement."

Air Force-wide, the housing division is supporting 33 MW of energy being produced at nine bases. The division recently approved two more solar projects adding another five MW to the portfolio and another 13 MW proposed across 11 bases.

Newly-installed solar panels on duplex housing at Peterson Air Force Base, Colorado. Solar panels were installed on installation homes across the United States to support the communities while contributing to energy resiliency. The energy generated from these solar panels will allow funds to be allocated towards Air Force family programs. The homes are part of the Air Force Housing Privatization program portfolio, which is managed by the Air Force Civil Engineer Center. (U.S. Air Force photo/Carole Chiles Fuller)



EUL, continued from pg. 1

Col. Craig Johnson, 96th Civil Engineer Group commander, brought his two sons to the site prior to the ceremony.

"I wanted them to see the things they're learning in science class have applications in the real world," said Johnson. "This is a great example of how a good idea can become a reality."

For more than five years, Eglin collaborated with utility companies, Gulf Power and Coronal Energy, to create the solar array project on a 240-acre area of Eglin property adjacent to College Boulevard in Niceville.

The project centers on an enhanced use lease where members of the Air Force Civil Engineer Center and Eglin's real property team were able to identify underused DOD property and enter

into an agreement to develop the land for the solar farm.

"The partnership with the installation allows AFCEC to pursue EUL project opportunities, like the solar array at Eglin, with the highest potential return and lowest potential risk, while maximizing value through highest and best use of the property," said Bob Moriarty, AFCEC Installations director.

Eglin's solar farm is just one part of the 120-megawatt alternating current Gulf Coast Solar Center portfolio; the largest solar project in Florida and east of the Mississippi River.

Other locations within the project include Saufley Field near Pensacola Naval Air Station and Whiting Field's Outlying Landing Field Holley.

Although Eglin will not directly

receive power from the solar panels, this project pushes the base closer to meeting Executive Order 13693. The order requires federal facilities to ensure 25 percent of the total energy consumption is from clean energy sources by the year 2025.

This project is also currently the largest EUL project in the Air Force.

Daniel Van Clief, president of Coronal Development Services, expressed his gratitude saying, "These projects built on Department of Defense property would not have been possible without the cooperation and tenacity of the United States Air Force."

By April, all 240 acres of solar panels are scheduled to be operational and creating clean energy for future generations.

AMRS 2.1 launches at Eielson

By Jess Dupree
AFCEC Public Affairs

The advanced meter reading system, or AMRS, team from the Air Force Civil Engineer Center at Tyndall Air Force Base, Florida, recently installed and launched the first AMRS 2.1 at Eielson AFB, Alaska.

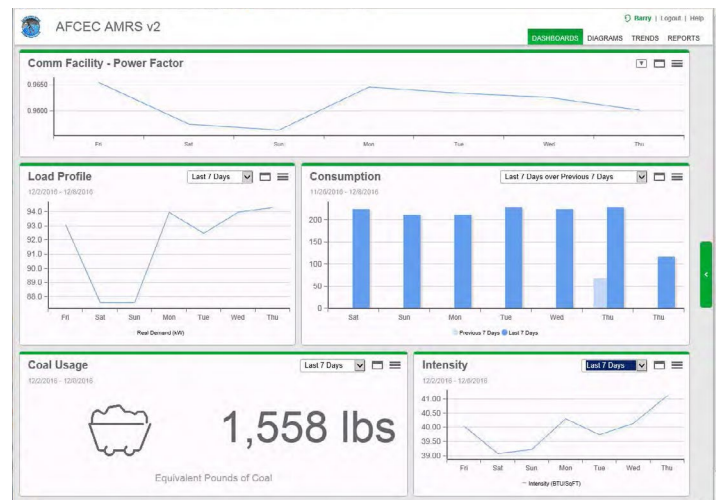
AMRS 2.1 features enhanced cybersecurity and improved graphic user interface, and significantly better graphic displays and analysis tools built into the software, said Paul Carnley, AFCEC AMRS program manager.

A team of energy managers from across the Air Force identified tools and graphics that they typically need to perform their duties and to use their time in the most effective way. A software module within the WonderWare suite called Power Monitoring Expert, or PME, was added to the platform. While AMRS 1.0 software required a team of programmers to write custom script for each installation, PME is an off-the-shelf, user-friendly product.

"We don't want to add to the workload, we want to make it easier," Carnley said. "The AMRS 2.1 software is easily adaptable, with lots of different drop downs for the user."

The AMRS program management office furnishes software support through a general services administration task order that provides cyber-security patches and software updates similar to the support for Microsoft products. The system will operate on the Civil Engineer Community of Interest Network Enclave, which provides continuous security monitoring.

"Version 2.1 is a complete system redesign, taking functionality and U.S. Air Force security policies into consideration from the user interface to the end device," said Eddie Walker, AMRS information system security engineer at AFCEC. "Additionally, significant improvements were made



One of the screens of the new AMRS software that displays live data from utility meters around the installation. (Courtesy graphic)

in segmenting user access controls so access can be granted as required.

The first iteration of the AMRS software provided updated meter readings every 15 minutes. The new version allows energy managers to see data updated in near real time.

"It's pretty exciting," Carnley said. "We can see instantaneous, live data coming off the meters, and we can address anomalies immediately if we need to."

In order to maintain reliability for energy managers, Carnley said further improvements to the AMRS software can be expected. The team is currently looking at both near- and long-term improvements.

"Our software team is working on improvements, and we will stay up-to-date on what our community needs," he said.



By Jessica Dupree
AFCEC Public Affairs

Nested within the Air Force Civil Engineer Center at Tyndall Air Force Base, Florida, is the Utilities Law Field Support Center. The ULFSC is comprised of a team of four specialized litigation attorneys and two paralegals.

"Our mission is really two-fold here," said Maj. Andrew Unsicker, ULFSC chief. "We represent the Federal Executive Agencies in utility

rate cases before various state commission, and we represent the Air Force, major commands, bases and also AFCEC in different types of contractual agreements, such as power purchase agreements, general service administration, or GSA, area wide contracts, energy renewable projects and energy conservation projects."

Also, the ULFSC is the lead representative for the Federal Executive Agencies, or FEA, in 19 different states. This means it shares

continued on pg. 5

From left , Ebony Payton, paralegal; Capt. Natalie Cepak, attorney; Maj. Andrew Unsicker, ULFSC chief; Tech. Sgt. Ryan Moore, paralegal; Capt. Lanny Zieman, attorney; and Drew Jernigan, attorney, comprise the Utility Law Field Support Center. The ULFSC is a team of specialized litigation attorneys and support personnel who ensure taxpayer dollars are being spent responsibly on the utilities vital to the Air Force mission. (U.S. Air Force photo/Jess Dupree)

ULFSC, continued from pg. 4

the responsibility of representing the FEA with other Department of Defense branches, GSA and Department of Energy, or DOE.

"Our efforts in the courtroom are felt throughout government in agencies beyond the Air Force," said Drew Jernigan, litigation attorney. "We've represented the National Aeronautics and Space Administration, the National Security Agency, U.S. Navy, U.S. Army, DEE, and Homeland Security interests in some of our more recent cases, and we achieved great results for all of them."

Across all Air Force installations, utility bills are paid from the installation's operations and maintenance, or O&M, account. This is the same account in which the installation funds its mission—highlighting the importance of the ULFSC team. The team is able to represent the interests of the Air Force and the installations in rate cases, avoiding unnecessary additional expenses to the O&M account. For calendar year 2016, the ULFSC, through active litigation, thwarted utilities companies' ability to claim an additional \$2 billion in revenue.

"We are responsible for ensuring that the installation is getting a fair rate for the services provided," said Capt. Natalie Cepak, ULFSC litigation attorney, "By doing so, the ULFSC is protecting the bases O&M funds and being stewards of the taxpayer dollars."

Traveling within the continental United States and championing for the FEA allows the attorneys to gain an expansive view on utilities in different jurisdictions.

"We travel to different installations across the Air Force to practice utilities litigation, which gives us a much more thorough understanding of what the trends are in terms of what the Air Force is being charged for utilities," said Capt. Lenny Zieman, ULFSC litigation attorney. "That knowledge set in turn gives us more credibility when we argue rate cases in front of a commission."

While the ULFSC might not be widely known throughout the Air Force, its impact is felt on a daily basis.

"We have a direct influence on how the installations' water, electricity or gas is helping to support their missions - both the installation missions and the overall Air Force mission," Jernigan said. "You don't get that opportunity at very many jobs. Being the boutique we are, our team is able to ensure the power stays on so the mission continues without very many people being aware of our role in the process."

The newest paralegal to the ULFSC team, Tech. Sgt. Ryan Moore said he is excited to be a part of something bigger than one installation.

"When I'm here, I'm not just affecting the Tyndall Air Force Base mission," he said. "I travel out and impact the other installations as well. It's more of an

Air Force mission impact than a local mission impact."

The ULFSC also provides legal support Air Force-wide on all issues that pertain to or may arise from obtaining electricity, water and gas utilities. The specialized team assists installations in managing the legal requirements for initiating and finalizing energy conservation projects and also renewable energy projects such as solar arrays.

"I like that we are a boutique office," said Ebony Payton, ULFSC paralegal support staff. "We are the only office in the Air Force that does what we do. We are also unique in that we are diverse with our military, civilian and contract support, and we all just kind of mesh together. It is rare for a small group to come together to accomplish our mission. It is a very unique process."

The members of the ULFSC said they cannot do their jobs without the assistance of the base energy managers. Typically, installation-level personnel are the first to receive notice of a rate increase, or to generate interest in a conservation or renewable project.

"Any current or new energy managers, who have either taken over for the first time or have moved to a new installation, should give us a call to introduce themselves or let us know they moved," Payton said. "Just keeping in contact with us is a great way to keep the ULFSC in the loop so we can help each other."

Call for Air Force Day training topics

Air Force Civil Engineer Center personnel are compiling a list of training and discussion topics for Air Force Day Aug 17-18 after the Energy Exchange conference in Tampa Bay, Florida. Potential topics include briefings on policies and procedures, and lessons learned from previous projects.

If you have a topic you would like to hear more about, contact AFCEC Rates and Renewables Division Chief Dan Gerdes at daniel.gerdes.1@us.af.mil.

For more information on AF Day and the Energy Exchange, see [page 8](#).



Eyes of excellence

AVT knows what to look for



By Susan Lawson
AFCEC Public Affairs

Members of the Air Force Civil Engineer Center asset visibility team, or AVT, were recently awarded the 2016 Federal Energy and Water Management Program Award for asset management contributions to the Air Force energy program.

The AFCEC AVT actively manages the Air Force-wide implementation of the sustainment management systems, or SMS, a suite of web-based software applications developed by the U.S. Army Corps of Engineers and resourced by all the services for Department of Defense use. Their work will help leadership, facility engineers, technicians and activity management plan, or AMP, managers decide when, where and how to best maintain infrastructure while conserving energy.

As the Air Force lead for SMS, the asset visibility team SMS program managers are teaming with USACE Civil Engineer Research Laboratory to develop a new DOD enterprise-wide integrated SMS capability that will improve visibility of the condition of all Air Force built infrastructure.

The AVT provides program management, training and reach-back to installations for the various SMS: BUILDER, PAVER, ROOFER, RAILER, FUELER and UTILITIES, used to store condition assessment information and analyze infrastructure data as directed by the Office of the Secretary of Defense. These systems provide predictive analysis to best utilize sustainment funds.

By validating and allocating funds for sustainment, the AVT assists bases with funding implementation. This capability earned AVT the FEMP award and their outputs are award-winning to bases in substantial savings and validation for large projects.

By the end of fiscal 2015, the AVT had completed built infrastructure assessments and level two energy audits at 22 Air Force installations and achieved an actual operational savings of \$26.2 million and 102 million British thermal units across the Air Force enterprise.

From June 2013 through February 2016, the AVT, working with base civil engineers, have collectively identified and validated \$16 million in investments that could yield the Air Force more than \$60 million in potential operational

energy savings across 24 of the 25 bases visited by the AVT.

"Our intent is to assist the bases across the enterprise in achieving success with an understanding and practice of asset management principles through teaching and showing base civil engineer personnel the why and how," said Col. Timothy Dodge, director of the AFCEC Operations Directorate.

There are three additional areas of benefit to bases provided by the AVT: "Reach and Teach," "Just Do It," or JDI, and "Spearfishing."

"Reach and Teach" is provided to train base engineers and technicians personnel on how to properly assess real property equipment at the base, identify

continued on pg. 7

Arnaldo Vincyenty, a member of the Air Force Civil Engineer Center's asset visibility team, or AVT, trains civil engineers at Spangdahlem Air Force Base, Germany, on infrastructure assessments, including building envelopes and other efficiency-related measures which can save the Air Force energy and funding. The AVT received a 2016 Federal Energy Management Program award for their contributions to energy in the government. (U.S. Air Force photo/Susan Lawson)

AVT, continued from pg. 6

energy savings opportunities and capture the assessment accurately in the SMS.

JDI delivers funding to energy projects through a funding initiative. This cuts through bureaucracy to directly fund bases to pay for AVT-validated energy and water conservation projects that are small but provide high-payback, typically with a savings-to-investment ratio of greater than five.

"Spearfishing" was a term coined by the team to quickly exploit and validate installation fence-to-fence, harvestable opportunities for either JDI funding or integrated priority list wedges that meet the SIR.

The AVT is staffed with experienced civil, electrical, mechanical and structural engineers, most with professional registration, and has over 900 years of combined professional joint service engineering experience. In the past, the AVT scheduled base visits based on the potential for energy savings.

"Our team constantly seeks performance improvements and has capitalized on the many lessons learned from the bases visited transforming the way the Air Force CE enterprise collects built infrastructure data and performs energy audits," said Michael Clawson, asset visibility division chief at AFCEC. "This is just one way AFCEC is augmenting base engineers with

valuable asset management expertise."

AFCEC established the AVT in October 2012 to fulfill the concept of operations originally envisioned by Air Force senior leadership for promulgating asset management principles, or AMP, across the CE enterprise.

The AVT installation assessment teams are created through a matrixed arrangement between three branches in the AFCEC Asset Visibility Division: the facilities branch-COAF, utilities branch-COAU and the transportation networks and airfield pavement branch-COAT. The Airfield Pavement Evaluation, or APE, Team-COAP operates in collaboration with the AVT.

All four branches support centralized investment planning and data fidelity-accountability through AMP management in coordination with all AFCEC directorates' sub-AMP and AMP managers.

The AVT strives to evolve their base visit methods. Current goals include continuing to teach asset management principles with an added task of hands-on validation of projects on the integrated priority list giving the base instant feedback. This new life cycle cost approach achieves the full intent of asset management.

To learn more about the Asset Visibility Team, contact the AFCEC Reach Back Center at afcec.rbc@us.af.mil.



Members of the Air Force Civil Engineer Center's Asset Visibility Team pose for a photo as they receive the 2016 Federal Energy and Water Management Program Award at the Federal Energy and Water Management Awards Ceremony in Washington, D.C., Dec. 7, 2016. The team received the award for asset management contributions to the Air Force energy program. From left, David Friedman, assistant secretary of Efficiency and Renewable Energy (Acting), asset visibility team members James Pittman, Andrew Carmean, Scott Sheffield, Tracy Coughlin, Josuelito Worrell and Timothy Unruh, program director of the Federal Energy Management Program at the U.S. Department of Energy. (Courtesy photo)

New AF Energy Flight Plan

Air Force Staff Report

WASHINGTON (AFNS) -- The Air Force introduced a new Energy Flight Plan, signed by Miranda Ballentine, former assistant secretary of the Air Force for installations, environment and energy, on Jan. 6.

Following the direction established by the Air Force 30 Year Strategy and the Strategic Master Plan, the Energy Flight Plan identified a long-term vision for the Air Force to enhance mission assurance through energy assurance.

"This plan, along with our recent policies, codifies the importance energy resiliency has to the Air Force mission and identifies how we are going to move forward," Ballentine said. "We need to take a holistic approach to energy projects to provide resilient, cost-effective, cleaner energy solutions to ensure we can continue to operate when our energy supplies are interrupted."

Throughout the last year, the Air Force continued to improve how it

manages energy by advancing new approaches and developing new projects.

In February 2016, the Air Force stood up the Office of Energy Assurance to take an enterprise-wide approach to facilitate energy projects that provide resilient, cost-effective, cleaner power to Air Force installations. It also established the Resilient Energy Demonstration Initiative to develop and deploy innovative energy resilience technologies and business models that could later be used across the Air Force.

Recently, the Air Force announced a \$262 million energy savings performance contract, ESPC, for the Oklahoma City Air Logistics Complex, at Tinker Air Force Base, Oklahoma. This contract – the largest performance contract in federal government history – will modernize 50 buildings and help reduce energy usage at the complex by 35 percent.

The Air Force exceeded its commitment toward the \$4 billion

Presidential Performance Contracting Challenge goal with this project. Under the challenge, each federal agency was charged with optimizing its energy footprint through the use of third-party performance contracts.

The Air Force is largely dependent on the commercial energy infrastructure for its electricity and fuel. The plan affirms three goals for the Air Force energy program – improve resiliency, optimize demand, and assure supply – and establishes a framework to make the best use of its energy resources.

"We are facing a changing threat environment to our energy systems, as cyber and physical threats to our energy systems continue to rise," Ballentine said. "It is important we have a comprehensive approach to our energy projects to ensure we have the technologies, processes and resources in place so we can continue our mission in the event of an outage."

To view the entire "U.S. Air Force Energy Flight Plan," go to www.safie.hq.af.mil/Programs/energy/strategy.

Energy Exchange registration open



This year's Energy Exchange is scheduled to run Aug. 14-17 at the Tampa Convention Center in Tampa Bay, Florida. Air Force Day will immediately follow the conference Aug. 17-18.

AF Day training is planned to conclude by 1 p.m. on Friday.

One hundred rooms have been reserved for Air Force attendees at the Marriott by the venue.

For more information, including vendors and schedule, visit www.2017energyexchange.com.

To register and reserve a room, go to <https://registration.experientevent.com/ShowEEX171/?AccessCode=AirForce8100>.



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

ENERGY | express

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

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



AFCEC Director Mr. Randy Brown

AFCEC Deputy Director Col. Charles Kuhl
Col. Charles Kelm

Director of Energy Mr. Robert Gill

Public Affairs Mr. Mark Kinkade

Editor Ms. Jess Dupree

Graphic Designer Ms. Jess Dupree