

"Make energy a consideration in all we do"

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A product of the Air Force Civil Engineer Center

September 2016



Energy Exchange

By Jess Dupree
AFCEC Public Affairs

More than 100 Air Force energy personnel from various leadership organizations and installations participated in the Federal Energy Management Program Energy Exchange 2016 conference in Providence, Rhode Island, Aug. 9-11.

The conference included speakers from across the Department of Defense, other federal agencies and commercial energy

offices. Air Force Civil Engineer Center Energy Rates and Renewables Division Chief Dan Gerdes spoke about AFCEC's renewable energy projects during the "Renewables in Action: Recent Projects" session at the conference.

"You don't get many opportunities to speak directly to this many members of the energy community with these levels of experience and expertise at one time," Gerdes said. "We really need to take advantage of venues like this to share our successes and our lessons learned. The

only way we're going to get better is to continuously learn from our mistakes and collaborate with others on their mistakes,"
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Air Force Civil Engineer Center Energy Rates and Renewables Division Chief Dan Gerdes speaks to members of the federal and commercial energy communities during a session at the Federal Energy Management Program's Energy Exchange in Providence, Rhode Island, Aug. 10. (Air Force photo/Jess Dupree)

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- ... and more!



Air Force takes home six FEMP awards

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The Department of Energy recently announced the winners of the 2016 Federal Energy Management Program awards.

Of the nine government agencies that won the 15 awards, the Air Force won six across three categories.

The Air Force Civil Engineer Center received nomination packages from around the Air Force in May, evaluated them and submitted the 12 best nominations for consideration by FEMP.

"We are extremely proud of our Air Force winners," said Assistant Secretary of the Air Force for Installations, Environment and Energy Miranda Ballentine. "These six individuals and teams have worked diligently to implement more energy efficient operations, conserve our water resources and generate significant cost savings for the Air Force. By reevaluating the ways we consume and manage energy, and leveraging new opportunities and technologies, they were able to establish best practices that can be shared throughout the Air Force. Their commitment, dedication and ingenuity serve as excellent examples of our energy community are working hard every day to ensure we provide mission assurance through energy assurance."

Congratulations to the following winners:

Career Exceptional Service Award

Jon Dalsfoist of the 673rd Civil Engineer Squadron, Joint

Base Elmendorf-Richardson, Alaska, won for his 45-year federal engineering career.

Edwin Walter of Volk Field, Wisconsin, won for his service to Air Force energy over more than 30 years.

Program Award

The Wright-Patterson Air Force Base energy management office in Ohio focuses on using energy efficiently while conserving energy and materials.

The 145th Civil Engineer Squadron at Charlotte-Douglas International Airport Air National Guard Base, North Carolina, created an exceptional energy management team that encompasses a myriad of initiatives and programs, resulting in outstanding energy savings as well as substantial quality-of-life improvements for its customers.

The AFCEC asset visibility team energy program at Tyndall AFB, Florida, is actively managing Air Force-wide implementation of the sustainment management systems. Their work will help leadership, facility engineers, technicians and activity management plan managers decide when, where and how to best maintain infrastructure while conserving energy.

Project Awards

The energy team at Dyess AFB, Texas, took on three major projects to improve light-emitting diode lighting and heating, ventilation and air conditioning systems at the installation.

To see the complete list of winners, and read more about each one, go to <http://energy.gov/eere/femp/federal-energy-and-water-management-awards>.



Assistant Secretary of the Air Force for Installations, Environment and Energy Miranda Ballentine poses with the Federal Energy Management Program award winners and their representatives. (Air Force photo/Jess Dupree)

and how they learned from them.”

Assistant Secretary of the Air Force for Installations, Environment and Energy Miranda Ballentine delivered the closing plenary for the conference. She spoke to the Air Force’s changing attitude towards energy resiliency and the increased threat towards energy security.

“The threat environment has changed, and it has changed dramatically,” Ballentine said during her closing speech. “The Department of Homeland Security tells us that there has been a seven-fold increase in cyber-attacks against the utilities in this country in the last five years. That should worry every single one of us because every single one of our missions depends on those electrons.”

Energy managers from the Air Force were also given the opportunity to network with and learn from their counterparts in the other DOD services. Other branches, such as the Army, expressed similar energy goals as the Air Force goal of “mission

assurance through energy assurance.”

“Our job is help you find the pathway to achieving net zero energy, water and waste on Army installations so we can ensure we have a ready and resilient Army prepared for the future,” said Assistant Secretary of the Army for Installations, Energy and Environment Katherine Hammack during question-and-answer session with DOD energy personnel.

Many attendees found opportunities for career growth outside the lecture halls and inside the hallways and break rooms.

“Of course the education and training was great; but, for me, the real benefit of the conference was the networking and the ability to share best practices and lessons learned with the rest of the energy community,” said John Shartzter, energy manager at Edwards Air Force Base, California.

FEMP Energy Exchange 2017 is scheduled for Aug. 12-15 in Tampa, Florida. For more information about the Energy Exchange, visit the FEMP website at <http://energy.gov/eere/femp/energy-exchange>.



At left, Assistant Secretary of the Air Force for Installations, Environment and Energy Miranda Ballentine speaks to attendees at the closing plenary of the Federal Energy Management Program Energy Exchange in Providence, Rhode Island, Aug. 11. Ballentine spoke to members of the federal and commercial energy communities about steps the Air Force is taking to assure access to energy to complete missions both at home and abroad. (Air Force photo/Jess Dupree)

At right, Dennis Seeger, a traveling resource efficiency manager at the Air Force Civil Engineer Center based out of Tyndall Air Force Base, Florida, talks to an installation REM at the Air Force booth during the trade show at the Federal Energy Management Program Energy Exchange in Providence, Rhode Island, Aug. 11. The trade show gave federal and commercial energy personnel a chance to speak directly to Air Force representatives about the energy program. (Air Force photo/Jess Dupree)



Energy Surety Subject Matter Expert Air Force Civil Engineer Center

Watley has worked with industrial control systems and, for the past three years, has been the energy surety subject matter expert. Watley's experience in cyber security and energy security give him the tools to help the Air Force achieve Energy Assurance through Mission Assurance.



What is energy surety?

The focus is on reliability and resiliency of our infrastructure, and on the energy systems that support our infrastructure. The Assistant Secretary of the Air Force for Installations, Environment and Energy Miranda Ballentine has established a vision with three guiding principles. The first one is reliable and resilient infrastructure, the next point was cost-competitive acquisition of systems and finally the last principal was clean technologies. So I am focusing in on that first principle of reliable and resilient systems.

On the reliability side, we are looking to see infrastructure that is dependable. Essentially, the way Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure Mark Correll put it was, "it's there when you need it." The resilient aspect of it is, we want to have systems that can withstand physical as well as cyber-attacks. So the two key components are: is it there when I need it and can they withstand attacks?

Why is surety important now, compared to five, 10 or 20 years ago?

Realistically, it's been important forever. I think now, the visibility is there because the sophistication of the cyber-attack factor. That factor has really exacerbated the need for more resilient infrastructure. If you think about things going on around the world right now, the Islamic State group, the anonymous attack groups, the hacktivists, these guys now have figured out how to have kinetic effects over what are considerably important infrastructures.

Over time, our infrastructure has gone from being controlled by switches, pneumatic controls and valves where people flip and switch, to computer-operated,

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sophisticated and intelligent infrastructure. Smart buildings, smart grids, all of these are automated, computer-operated systems. So that opens up the whole realm of infrastructure systems to the cyber world. Unfortunately, the resiliency aspect for infrastructure systems, historically, has been largely ignored. We started putting automated computer applications in with little thought to computer and cyber security. And so that vector is now wide open.

The Air Force is not the only organization with this issue is not just the Air Force. It goes through the Department of Defense and the commercial industry. And so now we are backtracking to look and see what we can do right now and what we can plan for in the future from a cyber perspective to secure those systems. From a physical attack perspective, I would say we're pretty well off. That is handled through our anti-terrorism and force protection policies and procedures. But from that cyber perspective, it has really put a spotlight on infrastructure.

For example, Stuxnet in 2009. A computer bug was inserted into the system that controlled the Iranian nuclear program and it had a kinetic effect. It damaged infrastructure and sabotaged, for a short duration anyway, their ability to develop nuclear technology. And that opened the world's eyes to the fact that we could have a real effect on power, water and gas systems by just inserting computer bugs to have them do something they normally would not do.

The potential to disrupt these systems would definitely impact our mission. For example, if a bug were inserted into a computer that controlled a boiler, and the bug told the computer to raise the temperature until the boiler exploded, that would be a major disruption. There are, of course, safety mechanisms built into the design that kick in to prevent the boiler from damaging itself. In this case, valves might open to let the steam escape and to keep the temperature down. But still, there is going to be a delay in operation because someone has to go down there and figure out what happened in the first place. In this day and age, it is not necessarily being able to destroy your infrastructure, it is causing you to react to a major delay in your operation that throws your mission timing off. So those kinetic effects lead to degradation in mission and becomes, what we in the military call, a feint, causing someone to react to something that is not the primary target or the primary objective. So, for all of these reasons and more, the resiliency of our energy systems is extremely important today.

What are some ways we are looking at achieving resiliency and surety?

At this time, to tie back with the secretariat's vision and her three points, I am focusing in on the reliable and resilient aspects. I am working with other subject matter experts here in the Air Force as well as my counterparts in the Army and Navy to figure out how we can standardize

resiliency and how we can bring this effectively into the DOD, and we are all focused on doing better. There are plenty of commercial applications and best practices, there are even some commercial standards that are starting to come online. So we're looking at how we can adopt some practices from the commercial sector into our military installations. I know there is a lot of applicability, but there are also some nuances that need to be carefully looked at.

So ultimately, we are working to achieve Mission Assurance through Energy Assurance and we are working the reliability and resiliency angles of Ms. Ballentine's three aspects. And that may mean that things are not going to be as cost-competitive or clean, we don't balance those aspects equally. It's based on the mission, so the commander might have to say, "I need to pay more so I can have that reliability and that resiliency," or, "Clean energy is great, but it is still in its infancy and I am not sure I want to rely on that with a critical mission."

Ms. Ballentine has pointed out, though, that we are so heavily reliant on 20th century technologies and practices. Generators have some applications for resiliency, but certainly in the 21st century with new technologies, better automation and things of that nature, there are smarter ways of doing business that we want to get at that will answer all three of the guiding principles to hit what Ms. Ballentine calls a sweet spot. So the ideal is that I get resiliency, I get reliability, but I also leverage cost-competitiveness and clean technologies. It's tough to do, but I believe we will get there.

The Office of the Secretary of Defense released its latest guidance on installation energy, and that introduces a whole new chapter on energy resiliency. I am working with their team on their implementation guide. It will not be an enforceable guide but it is valuable as a "how to" for implementing the new DOD instruction. I have also set up a unified facilities criteria, or UFC, to go hand-in-hand with that implementation guide.

There is a tiered factor to resiliency. I believe that every installation does not need to be outfitted with the highest level of resiliency. There is some risk that we as an Air Force will ultimately take, and that risk is balanced across the mission profile. What we do not want to happen is, the installations spend millions of dollars beefing up their resiliency when their mission is not an Air Force or a wing critical mission. We have to make sure we take care of the most Air Force critical missions first, and widen the aperture from there. Taking the resiliency process from a decentralized approach, which it is now, into a holistic approach will keep oversight for where we spend those resiliency dollars. We are changing it from a bottom-up process to a top-down process.

Another thing the secretariat was looking at is "energy as a service." To me, this is contractor-owned and contractor-operated energy systems for an Air Force installation.

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Essentially, in terms that we all understand, this is privatization. In the past, we have not done a good job of addressing the resiliency piece in energy contracts, so one of the things we're looking at is systems performance requirements. In those contracts, we will decide to privatize, give control to the contractor, but we will require that we have a certain level of availability or require that we have no more than a certain amount of downtime each year. The contractor can look at that number and say, "I need to have this kind of system to ensure this availability and this is what I need to charge you to maintain that system." From this "energy as a service" perspective, we are looking at what kind of performance specification requirements we can add to certain new contracts. As an example, if Tyndall were to create this contract with Gulf Power and we told them Tyndall required a higher level of availability than its other customers, which might mean they run an additional, redundant feeder off of their system. Privatization might also drive the cost-competitive aspect as well.

How does conservation relate to surety?

Conservation contributes to helping the environment as well as savings. From a resiliency standpoint, these savings

give more flexibility to the installation. If our generators are not using JP-8 to power the installation, that fuel can be redistributed to power the aviation mission. So resiliency can support conservation efforts through effective design standards in our facilities and our infrastructure.

The other piece of it is, if I improve resiliency by improving the infrastructure, repair costs could theoretically be avoided. Those are operations and mission funds that can now be reverted back into the mission instead of going toward infrastructure.

What can energy managers be doing now while they wait for that top-down guidance?

There are three things energy managers can and should be doing now to prepare for resiliency. (1) Continue your conservation efforts. (2) As you begin looking at resiliency, we encourage you to discuss those ideas with us at AFCEC rather than doing your own thing. In this decentralized environment, decisions made now can have an effect on headquarters guidance later down the road. (3) AFCEC's Energy Directorate is currently developing an Installation Energy Master Plan that will have a surety component, so keep on the lookout for this document as well as the implementation plan.

Air Force Day a chance to hear straight from energy leadership

By Jess Dupree
AFCEC Public Affairs

Assistant Secretary of the Air Force for Installations, Environment and Energy Miranda Ballentine joined other leadership from the secretariat, the Air Force Installation and Mission Support Center and the Air Force Civil Engineer Center to address members of the Air Force energy community about current policies and the way ahead during Air Force Day Aug. 11-12.

Air Force Day featured a series of discussions about the service's energy program for its personnel, and took place after the Federal Energy Management Program Energy Exchange Conference in Providence, Rhode Island.

"We want to make sure everyone is on the same page," said Mark Correll, deputy assistant secretary of the Air Force for environment, safety and infrastructure. "That means everyone from senior leadership to AFCEC to IMSC. And it means you have an idea

of what we think we're saying and you have an idea of what should be done."

Correll discussed the organizational structure of the different organizations involved in Air Force energy. He used an analogy of planning a road trip to point out each organization's role and responsibilities in that planning. Each organization from the secretariat to the new Office of Energy Assurance has a role to play in getting the Air Force to the final destination.

AFCEC Director Randy Brown elaborated on Correll's statements by further outlining AFCEC's involvement in energy and their goals for the Air Force community.

"We want to take the strategy that Ms. Ballentine and Mr. Correll have laid out, and put it into action," Brown said. "We want to keep thinking horizontally. What gets me upset is when someone says, 'CN is our energy people.' Because if CO is our operations people, CI is our real estate people, CF is our facilities people, then we have a partial failure.

Because all of them need to be working together to achieve this strategy."

Attendees were able to ask questions directly to panel members, giving them accessibility to leadership that is usually not available at their home installations.

"Air Force Day was a great experience," said John Shartzter, energy manager at Edwards Air Force Base, California. "Listening to Ms. Ballentine and her panel speak about the future of Air Force energy, utility partnerships and base-execution strategies was enlightening. They were able to address our concerns and elaborate on the Air Force vision, which was very helpful to center our focus on future projects and plans."

The theme of the FEMP Energy Exchange conference was repeated several times during Air Force Day as a takeaway for the Air Force energy managers and their missions.

"We are not in the business of energy," Correll said. "We are in the business of defense. But energy is crucial to that business."

PHOTOS FROM AIR FORCE DAY



Clockwise from top left, Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure Mark Correll addresses Air Force energy managers at the beginning of Air Force Day in Providence, Rhode Island, Aug. 11. Assistant Secretary of the Air Force for Installations, Environment and Energy Miranda Ballentine and Air Force Civil Engineer Center Director Randy Brown answer a question posed to them by an Air Force energy manager on the second day of Air Force Day Aug. 12. Assistant Secretary of the Air Force for Installations, Environment and Energy Miranda Ballentine speaks to Air Force energy personnel during Air Force Day Aug. 12. Ballentine spoke about her goals for the Air Force energy program and how Airmen at the installations can draw support from leadership to attain those goals. (Air Force photos/Jess Dupree)



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

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