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ENERGY express

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Largest

Air Force ESPC awarded at Tinker ALC

By Jess Dupree
AFCEC Public Affairs

The Defense Logistics Agency Energy awarded an energy savings performance contract Dec. 13, for the Oklahoma City Air Logistics Complex, or OC-ALC, at Tinker Air Force Base, Oklahoma.

The $262 million project, the largest in the Air Force, was awarded to Honeywell International, Inc., to modernize 50 buildings, totaling more than 10 million square feet, with energy conservation measures expected to increase energy efficiency, reliability, surety and resiliency, with particular emphasis on industrial infrastructure process improvements.

After completion of a 42-month

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Workers at Tinker Air Force Base, Oklahoma, install critical 40/45 upgrades to E-3 AWACS aircraft during programmed depot maintenance at the Oklahoma City Air Logistics Complex. The Defense Logistics Agency Energy recently awarded an energy saving performance contract to implement energy conservation measures at the OC-ALC. (U.S. Air Force photo)

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AFCEC Energy Security Working Group

By Jess Dupree
AFCEC Public Affairs

The Air Force Civil Engineer Center's energy champions and subject matter experts across the directorates came together recently to discuss energy strategy, including the way ahead for Air Force installation energy plans.

The Air Force energy flight plan will be publically released in early 2017 and outlines Air Force energy objectives for the next five to 10 years. The flight plan is meant to function as high-level guidance and does not provide specific action steps to meet each objective. AFCEC plans to bridge that gap by giving Air Force energy personnel clear guidance on achieving enterprise-wide goals.

While some installations currently have installation energy plans as part of their installation development plans, AFCEC aims to assist energy managers in updating or creating new plans that will address energy resiliency in addition to conservation and efficiency.

"There are approximately eight objectives from the energy flight plan that apply to AFCEC," said Maj. Josh Aldred, AFCEC chief of strategic energy initiatives. "With this group, I wanted to come up with some action items that we can use to create an execution plan. I think by bringing all of those experts here, we were able to accomplish that."

The commercial grid can go down for a variety of reasons, including weather and cyber-attack. In the event the commercial grid is rendered unavailable at an installation, Airmen should still be able to sustain operations using backup energy to complete their mission. The duration and amount of backup power needed varies from mission to mission, which is why each installation needs to formulate a unique energy plan.

"Each installation is unique," Aldred said. "From the enterprise level, we can present a framework of how to approach energy security, but we need to leave enough space inside that template to allow the mission owners to apply unique solutions at their installations."

For some installations with a stationary critical mission, energy resiliency will be more important. The working group discussed aspects of resiliency such as energy redundancy, hardening, diversification, availability and recovery which can be targeted with projects like microgrids.

"Currently, the Air Force does not have any criteria or standards in place to measure the feasability of microgrids," said Tarone Watley, AFCEC energy surety subject matter expert. "That is an action item identified in this working group."

By taking an enterprise-wide approach, each installation energy plan will align with Air Force strategic goals, and uphold the "Mission Assurance through Energy Assurance" mantra.

AFCEC aims to complete five installation energy plans by fiscal 2018.

Participants of the Air Force Civil Engineer Center's energy security working group discuss Air Force energy strategy with Maj. Josh Aldred, AFCEC's chief of strategic energy initiatives. The team, which consisted of energy experts from several of AFCEC's directorates, met for the two-day working group in December. (Air Force photo/ Lyndsay Allen)

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construction effort, included as part of the 25-year performance period, the total annual energy savings are projected to be 641 billion British thermal units per year, equivalent to the average annual energy consumption of more than 8,300 homes. In addition to a projected 35-percent reduction in OC-ALC energy usage, this project provides water efficiencies, with OC-ALC water usage projected to reduce 9 percent.

This effort is a holistic approach to the OC-ALC intended to achieve improvements in energy efficiency, water efficiency and industrial process improvements for the OC-ALC depot maintenance facilities. Energy conservation measures to be implemented include: replacing an aging central heat plant system with distributed heating solutions, chiller plant improvements including two new 2,000-ton chillers, energy management control system upgrades, energy-related process improvements for the paint and thermal spray booths, treatments for compressed air and industrial waste, light-emitting diode lighting upgrades and controls, infrared heating retrofits, and water and sewer conservation that will increase efficiencies across all OC-ALC systems.

The project is a joint effort among Tinker, Honeywell, DLA Energy, Headquarters Air Force Materiel Command and AFCEC. The team of energy and contracting experts from each organization was able to execute the award in 21 months.

Les Martin, AFCEC program development division chief, said the Tinker OC-ALC and DLA energy teams exceeded expectations and were instrumental in the execution of this extensive project. In fact, the execution of this award is not only a success for the Air Force, but the entire federal government.

"The triad of experts from DLA, Tinker and AFCEC were truly amazing during the development of this project," Martin said. "Their efforts put the federal government over the top, achieving the Presidential Performance Contracting Challenge goal of awarding $4 billion for ESPCs by Dec. 31, 2016."

The civil engineers at the OC-ALC and Tinker AFB, especially Joseph Cecrle, the OC-ALC energy manager, were instrumental to bringing a contract award to fruition, said Tom Laney, ESPC project manager at AFCEC.

"Tinker is an extremely forward-thinking base," he said. "Through the development of this complex and vast ESPC effort, the AFCEC energy team is excited for Tinker to achieve and realize its energy goals while contributing to Air Force-wide energy goals and challenges."

Team Tinker, which also includes OC-ALC process and facility engineers, provided countless hours and involvement in technical meetings to bring success to a very complex and critical mission infrastructure project, Cecrle said.

"One of our goals is to become a 'Complex of the Future,'" he said. "This ESPC is a great opportunity for our organization to invest in that vision."

All members involved in the contract said they believed Honeywell brought forth a technical team who is dedicated to achieving OC-ALC goals. Prior to being awarded the contract, Honeywell provided a comprehensive audit and analysis of the complex to discover opportunities for maximum energy and water savings with a particular emphasis on industrial process improvements. Honeywell's ESPC proposal also provided a long-term cultural focus on efficiency by implementing ISO 50001 Energy Management System standards.

Under the ESPC model, ESCOs compete to finance, design, construct and manage energy projects, and maintain the systems long-term. ESPCs range from 10 years to a maximum of 25 years, with the Air Force paying the ESCO back over the term of the contract from cost savings garnered by the energy efficiency improvements they make.

Electronics Mechanic J.D. Drake, with the 550th Commodities Maintenance Squadron, checks equipment at a compact range at the Oklahoma City Air Logisitcs Complex at Tinker Air Force Base, Oklahoma. Honeywell, an energy service company, was awarded an energy savings performance contract at the OC-ALC, which is expected to reduce energy usage by 35 percent. (Air Force photo /Kelly White)

Largest military solar project in Northeast breaks ground

By Senior Airman Joshua King
JBMDL Public Affairs

JOINT BASE MCGUIRE-DIX-LAKEHURST, N.J. -- Miranda A.A. Ballentine, the assistant secretary of the Air Force for installations, environment and energy, and Brig. Gen. Michael Cunniff, the adjutant general of New Jersey, helped break ground on a 98-acre solar farm at Joint Base McGuire-Dix-Lakehurst Dec. 21.

The 16.5-megawatt solar energy project will be the largest military solar installation in the Northeast and include more than 50,000 solar panels when it's completed in 2017.

"This is a great example of a cleaner, more resilient project, and we're going to be doing more of them," Ballentine said. "This project demonstrates the innovative pathways our Airmen and civilians are taking to strengthen mission assurance through energy assurance."

Once completed, the solar array will produce more than 21,000 megawatt-hours of renewable energy every year – enough to power more than 2,500 homes.

"Solar power is one of the most efficient and affordable energy alternatives today," Cunniff said. "Whether you're interested in solar power because of its economic or environment impact, during these times of budgetary constraints on the federal side and the state side, I think we can all agree this joint solar project could not happen at a greater time."

Affiliates of Starwood Energy Group and Energy Management, Inc. developed the project, which is located on a capped landfill. The project is part of the Air Force's Enhanced Use Lease program that helps create mutually beneficial commercial projects on Air Force land.

"New Jersey's leadership in solar energy policies is creating a healthier environment, greater energy independence and more stable energy costs for the region," said Jim Gordon, EMI president.

More than 15,000 metric tons of carbon dioxide emissions is expected to be reduced, an equivalent of 3,000 cars removed from the road.

"We are pleased to contribute to the renewable energy objectives of the United States military, and appreciate all of the support for this project from the Pentagon, Air Force Civil Engineer Center and Joint Base McGuire-Dix-Lakehurst," said Brad Nordholm, the senior managing director and co-head of Starwood Energy.

True Green Capital and affiliates will build, own and operate the solar array in partnership with the Conti Group.

Miranda A.A. Ballentine, assistant secretary of the Air Force for installations, environment and energy, speaks at Joint Base McGuire-Dix-Lakehurst, New Jersey, Dec. 21, 2016, during the ground breaking of a 16.5-megawatt solar energy project. The project will include more than 50,000 solar panels upon completion in 2017. (Courtesy photo)

Team Vance produces an energy-aware culture

Roberto Guerrero, the deputy assistant secretary of the Air Force for operational energy, discusses the part Vance Air Force Base, Oklahoma, plays in producing an energy-aware culture. Team Vance teaches student pilots how to shave more than 6 percent off their fuel consumption on cross-country sorties and 3 percent on local flights. (U.S. Air Force photo/ Mark Harrell)

By 71st Flying Training Wing Public Affairs

VANCE AIR FORCE BASE, Okla. -- The Air Force's Energy Analysis Task Force focuses on saving fuel costs through improving resiliency, optimizing demand and assuring supply.

According to the task force, Airmen are a key element to the success of these goals, so it is imperative to foster an energy aware culture among the Air Force's newest aircrew.

Team Vance played a big part in producing energy-aware culture by teaching student pilots how to shave more than 6 percent off their fuel consumption on cross-country sorties and 3 percent on local flights.

"We appreciate the 71st Flying Training Wing's cooperation and support during our fuel efficiency small group tryout," said Roberto Guerrero, the deputy assistant secretary of the Air Force for operational energy, during a recent visit here.

The small group tryout he referenced was held two years ago with great success. Thirty-four students in the 3rd Flying Training Squadron were given an in-flight guide page with tables for flying fuel efficient cruise speeds and altitudes. After the trial, data gathered from the 34 students were compared with baseline data.

The study validated the effectiveness of the training and demonstrated fuel savings in all measured areas. Student surveys after the study indicated students had an improved understanding of selecting fuel-efficient cruise altitudes, calculating fuel-efficient descents and an increased awareness of fuel efficiency in general.

"The tryout validated the effectiveness of introducing fuel efficiency techniques in initial training to help foster an energy-aware culture," Guerrero said. "Small changes in the behavior of our people and the processes they employ can generate significant cost avoidance savings to the U.S. Air Force."

Currently, these changes have been incorporated into the Vance T-1 training syllabus. This new energy-aware mindset will be carried forward to the Air Force's major weapons systems and turn small changes into big ones.

These changes are essential under current budget constraints.

"Over the past 10 years, the Air Force's total energy expenditures have increased 5 percent, amounting to nearly $8.5 billion, with more than 86 percent of those energy costs going to aviation," Guerrero said.

His duties as deputy assistant secretary of the Air Force for operational energy include improving energy resiliency by ensuring continuity of operations, optimizing demand through elimination of waste, and assuring supply and uninterrupted

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access to operational energy.

Improving resiliency includes increasing fuel flexibility and availability for Air Force aircraft. One example of this is the transition of jet fuel from military specific JP-8 to the widely available commercial jet fuel, Jet-A.

"By blending military-specific additives into Jet-A, we bring the fuel up to JP-8 specifications, giving us the flexibility to acquire and use this type of fuel throughout the United States and around the world, and at a cheaper price," said Guerrero.

Additionally, the Air Force certified all of its aircraft for operation on two different types of alternative fuels. These alternative fuels can be mixed with Jet-A or JP-8 at a 50/50 blend.

"As energy becomes a bigger part of the budget, we are more and more interested in ensuring we're optimizing that energy use," he said. "That will bring savings back into the operational world so we can buy more combat capability."

Guerrero expressed great appreciation for the support provided by the men and women at Vance.

"They helped the Energy Analysis Task Force accomplish its mission of identifying and evaluating energy initiatives across the Air Force to meet Department of Defense and Air Force strategic energy goals."

Training Opportunity

After a seven-year hiatus, the Defense Logistics Agency Worldwide Energy Conference returns to the National Capitol region April 10-12 at the Gaylord National Convention Center, National Harbor, Maryland.

This conference showcases the Department of Defense's strategic energy role and provides government officials and colleagues, defense department officials and industry experts the opportunity to gain insight into the various ongoing and future petroleum, alternative fuels and renewable energy initiatives, led by DLA Energy. The theme of this year's conference is "Refining Global Energy Strategies."

Conference organizers aim to provide a forum to address:

- Domestic and international policies affecting the petroleum and energy-related fields
- Systems and equipment available today and emerging technology with the potential to impact energy solutions for military, government and commercial projects
- Status and outlook of market demand for petroleum, alternative fuels and renewable energy, both domestically and internationally
- Status of industry development, economics and competition of alternative fuels and renewable energy projects in the global economy
- Future energy needs of the Department of Defense

More than 100 panels and workshops will be available for conference attendees on topics ranging from future petroleum markets, installation energy markets to aerospace fuels and NASA propellant missions.

Registration is now officially open and booth reservations are underway.

For more information, including a listing of panels, workshops and prospective exhibitors, visit the conference website at www.wwenergyconference.com.

Disclaimer: Air Force energy personnel are not required to attend this conference, which is not affiliated with the Department of Energy's Energy Exchange conference August 2017.

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