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ENERGY | express

A product of the Air Force Civil Engineer Center

March 2017

New solar array being erected at Vandenberg

By Jess Dupree
AFCEC Public Affairs

The Air Force and Defense Logistics Agency Energy awarded a power purchase agreement at Vandenberg Air Force Base, California, to SunPower Corporation Systems to construct, own and operate a 28.2-megawatt

solar photovoltaic array on the former east housing area at the installation. SunPower leased approximately 129 acres from the Air Force for a 26-year term.

Once erected, this solar array will be the largest array in the Air Force where 100 percent of the power generated

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A commercial satellite on a United Launch Alliance Atlas V rocket, provided by Lockheed Martin, launches from Space Launch Complex-3, Nov. 11, 2016, Vandenberg Air Force Base, California. The installation is the site for the Air Force's most recent power purchase agreement. (U.S. Air Force photo/Staff Sgt. Shane Phipps)

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PEARL microgrid project demonstrates new possibilities in energy resiliency

By Holly Jordan
Air Force Research Laboratory

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — The Air Force Research Laboratory is leading the way for resilient, cleaner and cost-competitive energy solutions for military installations.

AFRL's Advanced Power Technology Office and the Hawaii Center for Advanced Transportation Technologies have initiated the design of the Pacific Energy Assurance and Resiliency Laboratory, or PEARL, a renewable energy microgrid laboratory that is part of an ongoing effort to demonstrate new ways military facilities can address energy needs.

A microgrid is a small, independently-sourced power system that, although attached to the main power grid, can work independently if necessary, providing a source of electricity if needed without reliance on the main energy supply.

PEARL will allow researchers to evaluate renewable energy generation, storage and control technologies by demonstrating new variances

of hydrogen fuel cell, gasification/waste-to-energy, and wind turbine technologies, in addition to new battery and photovoltaic, or solar, systems. Mission assurance and cybersecurity are also critical facets of the project.

Under a cooperative agreement with AFRL, HCATT awarded a \$1.5 million contract to Kansas City-based architect and engineering firm Burns & McDonnell to begin initial design efforts on the PEARL project, located at Joint Base Pearl Harbor-Hickam, Hawaii. Key project partners, including HCATT, AFRL, Hawaii Air National Guard, the National Guard Bureau, the Air Force Civil Engineer Center, MilTech and Naval Facilities Engineering Command Hawaii, recently joined in the design proposal review for the first of six planned microgrids. The grids intend to meet Air Force energy assurance and resiliency objectives for the HIANG 154th Wing.

"Microgrids are an important piece of the energy puzzle in terms of providing secure and reliable energy for DOD installations," said Kevin Spitzer, AFRL program manager. "They provide a

measure of energy assurance to guard against natural disaster, cyber threats and disruptions in power, helping to ensure continued operations."

The Air Force is increasing its focus on microgrid technologies in an effort to achieve new levels of energy resiliency for military installations. Spitzer says microgrids such as PEARL support the Air Force's overarching energy goals to improve resiliency, optimize demand and assure supply. Additionally, they can help reduce fossil fuel use, minimize solid waste and lower greenhouse gas emissions associated with military operations.

The PEARL project also complements the State of Hawaii's mandated transition to 100-percent renewable energy by 2045.

A newly-installed 134 kW photovoltaic array at Joint Base Pearl Harbor-Hickam, Hawaii, is part of the Pacific Energy Assurance and Resiliency Laboratory, a renewable energy microgrid project demonstrating new ways for military facilities to address energy needs. (Photo courtesy of HNU Energy/Joseph Cannon)

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is used by the installation rather than fed to the commercial grid.

The array will provide a projected 54,500 megawatts of energy each year, or about 35 percent of the total installation energy usage. The project team, including personnel from the 30th Civil Engineer Squadron, renewable energy, real estate and utility experts from the Air Force Civil Engineer Center, and members of DLA Energy awarded the 26-year contract, which is valued at \$96.3 million. The firm-fixed price has no escalation over the contract period and includes all associated environmental attributes generated from the solar array. Electricity generated from the project is projected to be less expensive than conventional power from the local

utility provider.

When the project is complete, it is expected to reduce annual emissions of carbon dioxide by 18,000 tons, the equivalent of removing more than 3,400 vehicles off the road. This project will contribute to the Air Force's goal to have 25 percent of energy provided by renewable sources.

"The chosen business model benefits the Air Force in its ability to enter a long-term contract with a third party thereby avoiding the need to maintain and invest into capital-intensive projects," said Dick Fillman, renewable project manager at AFCEC. "Combined with the energy and environmental benefits, this is a great project for the base and the Air Force."

The Air Force Energy Flight Plan,

which was released in January 2017, calls for Airmen to improve resiliency, optimize demand and assure supply. This solar array is projected to achieve progress in two of these mission goals.

"This project not only provides significant cost avoidance for the Air Force, but a redundant, behind the meter, source of energy for the installation and its critical space launch and tracking mission," said Dan Gerdes, AFCEC rates and renewables division chief. "Using a long-term contract with fixed costs ensures we have the electrons we need, when we need them and broadens the pool we have for power sources there. This is one step closer to our target of full energy assurance for key Air Force missions."

Annual CTS Data Call

The annual data call is driven by Office of Secretary of Defense and Department of Energy Compliance Tracking System, or CTS, update requirements.

The Air Force Civil Engineer Center must have the CTS covered facilities and the CTS energy evaluation worksheets updated on the AFCEC Energy SharePoint site or submitted by email no later than May 1, 2017.

To reduce the workloads of energy managers at the installations, data experts at AFCEC have pre-populated the CTS Energy Evaluation Data and CTS Covered Facilities workbooks.

Installation personnel may have completed additional evaluations that were not done by centralized programs such as the asset visibility team or sustainable infrastructure assessment. This information would not be pre-populated and should therefore be updated by installation personnel.

Energy managers, please validate or update draft data before submitting.



(Courtesy photo)



(U.S. Air Force photo/Sue Sapp)

AFSC director awarded Presidential Rank Award of Meritorious Executive

By AFSC Public Affairs

TINKER AIR FORCE BASE, Okla. — Jeffrey Allen, executive director of the Air Force Sustainment Center, recently received a letter from Gen. Ellen Pawlikowski, commander of Air Force Materiel Command, presented by Lt. Gen. Lee Levy II, commander AFSC, to congratulate him on receiving the 2016 Presidential Rank Award of Meritorious Executive.

The letter was sent in recognition of the official award, which will be presented during a formal presentation in the spring at the White House.

In the letter, Pawlikowski expressed her congratulations and said, “As the executive director of the Air

Force Sustainment Center, you institutionalized standard robust processes necessary to manage and improve the \$16-billion maintenance and supply chain budget resulting in a lower composite sales rate that allows the warfighter to buy the same amount of readiness at a reduced cost. Your pioneering energy savings and facility cost reduction initiatives across Air Force Space Command resulted in a 29 percent reduction in facility energy intensity.”

While presenting the letter from Pawlikowski, Levy said this wasn’t just a Department of Defense award, but a national award across the entire federal government.

The Presidential Rank Award of

Meritorious Executive is the second highest annual award given to selected career senior executive service members. No more than five percent of career SES members may receive the award in any given year.

“Mr. Allen has done some amazing things for the Air Force and for the Air Force Sustainment Center,” Levy said. “We appreciate what you do for the nation and we wanted you to know how proud of you we are.”

Allen said he was honored and humbled to receive this award.

“This is not about me though, it’s about the outstanding team of professionals within AFSC,” he said. “They are the ones who helped make this possible, so I share this award with each one of them.”

Lt. Gen. Lee K. Levy II, Air Force Sustainment Center commander, presents Jeffrey Allen, AFSC executive director, with a letter from Gen. Ellen Pawlikowski, Air Force Materiel Command commander, congratulating him on being a recipient of the 2016 Presidential Rank Award of Meritorious Executive. The award will be presented by the President of the United States in a formal ceremony later this year. (U.S. Air Force photo/Darren D. Heusel)



MYTH BUSTER

Myth: Air Force utility energy service contracts, or UESCs, must be valued under \$2 million.

FACT: UESCs are contractual agreements between the Air Force and a local and/or General Services Administration, or GSA, area-wide utility provider. While there is no policy that mandates the minimum and maximum values of an UESC, each contract is typically valued between \$8-10 million.

Unlike their cousins, energy saving performance contracts, or ESPCs, UESCs do not rely on precise measurements of energy usage to assure contract performance. Instead, UESCs are monitored using performance assurance. This means energy and monetary savings are assumed as long as upgrades and replacements are performing as designed within the specifications laid out in the contract.

Given the nature of performance assurance, UESCs do not guarantee savings and therefore are higher risk for the government. As monetary value and contract duration increase, the risk of the contract also increases. Contracting and energy experts from the Air Force Civil Engineer Center, the installation and the contracting agency will take into account the amount of risk the Air Force is willing to take when evaluating each UESC.

For example, a UESC at Nellis Air Force Base, Nevada, valued at about \$8 million was awarded to Southwest Gas Corporation. The aim of the UESC was to upgrade and install more than 1,600 street lights and more than 2 million square feet of interior lighting. The lighting upgrades are relatively low risk and offer guaranteed savings as long as the lights perform as expected.

Types of contracts
facilitated by
AFCEC/CND

ENABLE

\$1 million or less*

UESC

\$10 million or less*

Based on performance assurance

No guaranteed savings

Not to exceed 25 years

ESPC

\$10 million or more*

*monetary values are guidelines, not rules

Hill AFB's Energy Awareness Month 'Kilowatt Crackdown' competition completed

By Karen Bastian
Hill AFB Energy Outreach

HILL AIR FORCE BASE, Utah — The Energy Awareness Kilowatt Crackdown contest winner was announced Jan. 3 with Bldg. 383 squeaking past Bldg. 385 in an energy reduction contest hosted by the 75th Civil Engineer Squadron Energy Management Team at Hill AFB.

The contest kick-off began Oct. 1, garnering personnel and facility managers committed to succeed at the challenge, which was conducted during November and December. The call to action was made for all Airmen, civilians and contractors working in the buildings to practice energy efficient habits.

Throughout the course of the contest, building personnel were encouraged to be mindful of their surroundings, take action and turn off power consuming items that were sitting idle and not being used. Their goal was to "Not waste one watt." The challenge was educational, fun and contributed to the camaraderie with others. Most importantly the mission was not disrupted by the challenge.

Based on the fiscal 2015 baseline, the Hill AFB community is positively impacting the drive to reach Air Force energy goals of reducing energy per square foot by a total of 25 percent by fiscal 2025. Though it may not seem like

individual contributions do much, when hundreds of people work together for a cause their efforts can be a real needle mover.

Energy efficient living is not a fad and will not be going away. It is now that we continue to progress in living an energy efficient life. Let's celebrate the good choices and efforts people are making to achieve this goal and look forward to

a brighter tomorrow.

EDITOR'S NOTE: For more information on the energy program at Hill AFB, contact Karen Bastian at karen.bastian_ctr@us.af.mil.

For more information and ideas for installation energy competitions, visit the Air Force Energy Action Month website at <http://www.safie.hf.af.mil/Programs/Energy/Action-Month>.



Personnel who work in Bldg. 383 at Hill Air Force Base, Utah, pose for a photo for winning the Energy Awareness Kilowatt Crackdown. The Kilowatt Crackdown is an energy competition aimed at reducing energy use across the installation. The competition began during October 2016 for Energy Action Month. (U.S. Air Force photo)



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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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