

# 1-ON-1 WITH AWARD-WINNING HILL AIR FORCE BASE

BY JOSHUA BURNETT

**H**ill Air Force Base (AFB), located in northern Utah, is remarkable for several reasons. With an annual economic impact of more than three billion dollars, the base is the largest single-site employer in the state. The 75th Air Base Wing (ABW) oversees 1,000,000 acres and more than 1,700 facilities valued at four billion dollars, making it the second-largest Air Force base by both population and geographic size. The installation supports the Ogden Air Logistics Complex, Air Force Life Cycle Management Center, Air Force Nuclear Weapons Center, Air Force active duty 388th and Reserve 419th Fighter Wings, and over 50 mission partners that employ more than 21,000 personnel. Hill AFB was recently recognized by the Department of Energy (DOE) at the 2019 Federal Energy and Water Management Awards for their recent energy savings performance contract (ESPC) with Energy Systems Group (ESG) in collaboration with DLA Energy.

The base is no stranger to implementing energy efficiency measures, utilizing the ESPC procurement vehicle to do so. Over the last twenty years, Hill AFB has executed six task orders: three with Honeywell and three with Ameresco.

One of the ESPCs was the first contract under DOE's alternative fuels ESPC contracts. Ameresco installed a landfill gas

plant that runs off of methane sourced from the county landfill a few miles outside of the base. It produces 2.2 megawatts of electricity and was recognized as a substantial advancement in the base's support of alternative energy sources.

Other projects include infrared heating, large-scale lighting, and a small solar array that captures another 211 kilowatts of electricity.

These contracts were initially executed in the early 2000s and are coming to the end of their lifecycle. One expired last year, and Hill AFB bought out three more to prepare for another ESPC. The final two contracts with Ameresco are still active; the most recent ESPC with Energy Systems Group is in the construction phase.

Nickolas King is the base energy manager and is also the contracting officer representative for the ESPC installation. As the single point of contact for ESPC-related issues, all submittals, questions, approvals, commissioning sign off efforts, and day-to-day management of the contracts are his responsibility. He reports directly to the contracting officer at DLA Energy, who provides contracting support. In this interview, King shares his experience working on an award-winning energy savings performance contract.

## PROJECT STATS

TERM

**23**  
YEARS

CONTRACT VALUE

**\$91.1**  
MILLION

PROJECT TYPE

**ENERGY  
SAVINGS**  
PERFORMANCE  
CONTRACT

AWARDED

**APRIL**  
2018

Hill AFB receiving their award at the 2019 Federal Energy and Water Management Awards Ceremony (Pictured Left to Right) Alexander Fitzsimmons (Deputy Assistant Secretary for Energy Efficiency, DOE), Keith Carvalho (Contracting Officer, DLA Energy), Brian Walsh (Resource Efficiency Manager, Hill AFB), Nickolas King (Base Energy Manager, Hill AFB), Karen Bastian (Energy Conservation Tech/Outreach Coordinator, Hill AFB), Mark Correll (Deputy Assistant Secretary of the Air Force for Environment, Safety, and Infrastructure), and Rob Ivester (Director, Federal Energy Management Program, DOE). Photo by Department of Energy photographer, Donica Payne



**ESM:** What sparked the interest and need to pursue another ESPC within the last couple of years?

**King:** Most of the previous ESPCs were awarded in the early 2000s, and it had been quite a while since we had made any substantial new efforts to increase our energy efficiency. We determined that there was a significant opportunity to utilize new technologies. We knew that a new ESPC was going to come around eventually, and we wanted to be ready, so in 2015 we began the initial work of putting one together.

It was a significant effort and took quite a bit of time. When the project was submitted, the initial scope included over 40 Energy Conservation Measures (ECMs); that is a pretty high number even for a procurement vehicle of this size. As we went through and evaluated each proposal, we invested time assessing projects and slowly worked through the list. When the project was awarded, the scope included seven separate ECMs.

**ESM:** When you are sourcing an Energy Service Company (ESCO), what do you look for in a partner?

## ESCO: ENERGY SYSTEMS GROUP (ESG)

NUMBER OF BUILDINGS IMPACTED

300

TOTAL ECMS

7

Overall energy consumption will be reduced by 9% and the energy costs will be reduced 13%. The distributed/renewable energy portfolio will increase by 30%.

1

PNEUMATIC TO DDC CONTROLS

2

LED LIGHTING

3

STEAM DISTRIBUTION INSULATION

4

SOLAR ARRAY (3.55MW)

5

INDUSTRIAL AIR VENTILATION

6

COMPRESSED AIR

7

DIP TANK COVERS

“ We try to strike a balance between good stewardship of those resources **while achieving the best overall outcome for the project.** ”

**King:** At the base level, we want someone who has experience in the ECMs we are looking to implement. The landfill gas plant, for example, was the first that the Air Force had ever attempted, so we did not have a lot of expertise in that specific technology. Another example is the combined heat and power project. The ESCO showed that they have already built several similar systems and walked us through some of the challenges and solutions they had previously encountered.

In addition to expertise, the cost is a constant priority. We are not the final say on procurement price at the installation level, but we always keep in mind that we are spending tax dollars. We try to strike a balance between good stewardship of those resources while achieving the best overall outcome for the project. We take our due diligence seriously to avoid a situation where we have paid a lot of money for something that does not end up working as well as we had expected.

Another thing we look for in a winning bid is a company that has a well-developed project management team. We have learned the value of having a fully developed commissioning plan in place before the project is awarded: this should be one of the top priorities and never an afterthought. A good ESCO team is heavily involved throughout the entire process, from project development to commissioning. It is not uncommon for engineers who

initially worked on project development to be assigned to other tasks; changing the team makeup can present a new challenge.

**ESM:** What were some key ECMs that set the project apart and led to award-winning results?

**King:** Since we were still in the construction phase when we submitted the project, we submitted it under the Innovative Contracting Efforts. What sets the ECMs apart is the inclusion of process-centered ECMs. These efforts affected one of our largest tenants, the Ogden Air Logistics Complex, where they perform maintenance on aircraft and aircraft components. We included several ECMs that were directly related to their processes, which required a lot of coordination to ensure the improvements did not negatively impact the workload. One of these ECMs was dip tank improvements, where we installed lids on top of the tanks to allow us to close them off when not in use. This reduced the amount of heating needed in each tank.

Historically, the base has focused on more typical projects. It has become a priority to build energy efficiency into processes. We focused on efficiency within the contract itself, taking advantage of opportunities for utility incentives throughout the contract lifecycle. We worked hard with ESG during the project development to identify what those potential energy utility incentives were

## PROJECT DOE AWARD RECIPIENTS

**KAREN  
BASTIAN**

Energy Conservation  
Tech/Outreach  
Coordinator, Hill AFB

**KEITH  
CARVALHO**

Contracting Officer,  
DLA Energy

**NICKOLAS  
KING**

Base Energy Manager,  
Hill AFB

**BRIAN  
WALSH**

Resource Efficiency  
Manager, Hill AFB

going to be; to date, we have gathered over \$600,000 just from lighting improvements alone, and that all goes to help pay for the improvements that we have made.

**ESM:** *What advice would you give to other military bases that are interested in an energy savings performance contract?*

**King:** Before working with your contractor, have a clear definition of the ECM scope. Try and work through as many challenges as possible before you hand it off to the contractor—that will significantly help the IGA

development. We have focused on building our local teams so that we can go out, perform the investigation, and identify the scope and projected savings before we put it out to bid.

Do not get discouraged about some of the internal steps that you have to take. It is a lot of work to execute a project of this size and complexity. Prepare yourself for the amount of time required to see a project through to completion. The benefits that you can achieve far outweigh the effort you will put into it. ✨



*Nickolas King is the Base Energy Manager for the 75th Civil Engineering Group at Hill Air Force Base in Utah. Hill Air Force Base is the Air Force's second largest base by population and geographical size, and fourth largest in energy consumption. The 75th Air Base Wing is the host unit at Hill Air Force Base and oversees 1,000,000 acres and over 1,700 facilities valued at \$4B while providing installation support for Ogden Air Logistics Complex, Life Cycle Management Center, Nuclear Weapons Center, 388th and 419th Fighter Wings and more than 50 other mission partners that employ more than 21,000 personnel. The base also has support responsibility for the operation of the Utah Test and Training Range. Located in Utah's west desert, the airspace is situated over 2.3 million acres of land and contains the largest block of overland contiguous special-use airspace in the continental United States. King has a B.S. in Construction Management with an emphasis in Facilities Management from Weber State University. King has been at Hill since 2006 working in various capacities including environmental remediation, project management, and energy management.*

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