"Make energy a consideration in all we do"

ENERGY express

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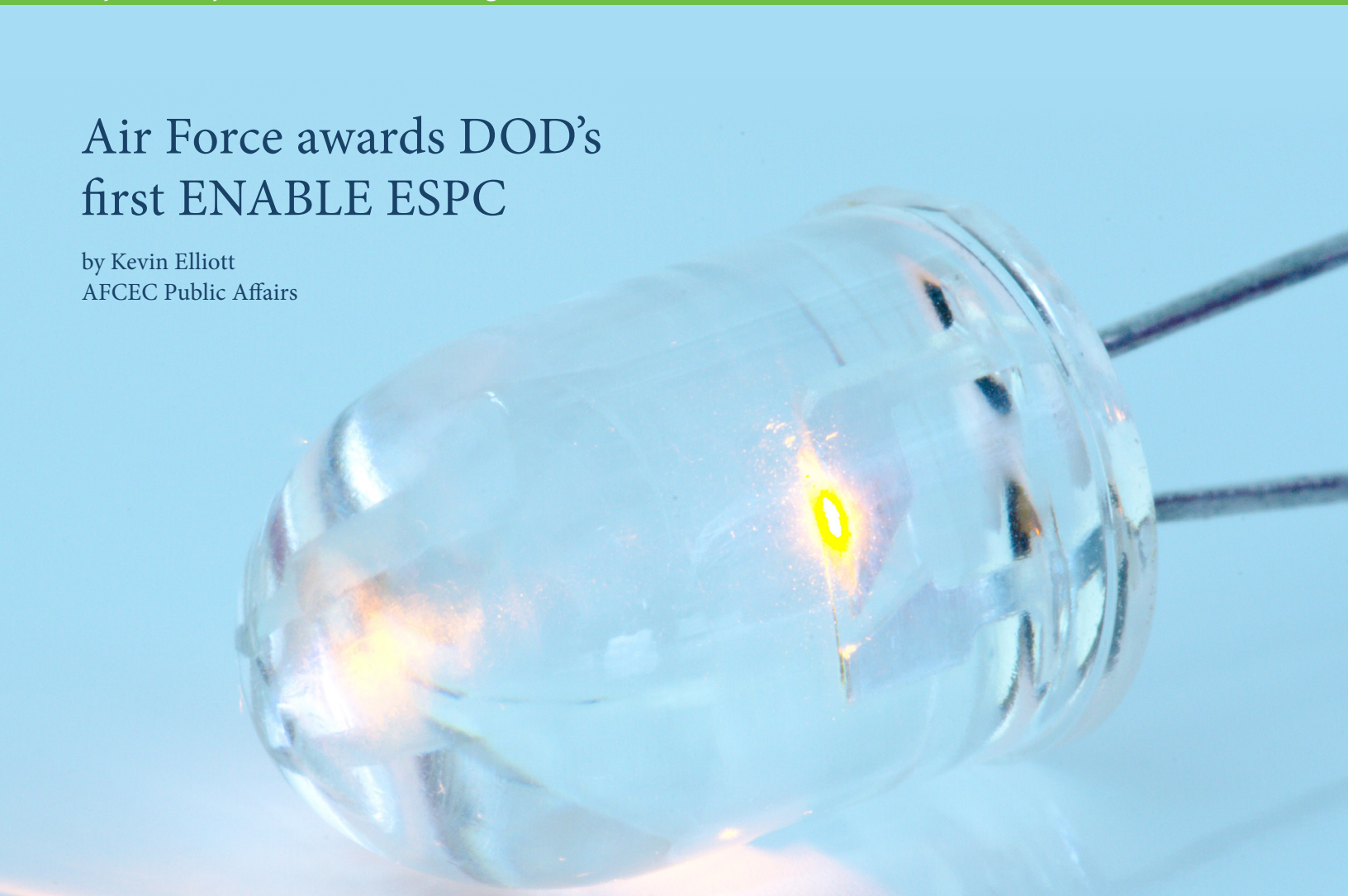
Air Force awards DOD's first ENABLE ESPC

by Kevin Elliott
AFCEC Public Affairs



The Air Force Civil Engineer Center recently announced the award of the first ENABLE energy savings performance contract in the Department of Defense, an exterior lighting upgrade at Laughlin Air Force Base, Texas.

The effort includes replacing approximately 1,400 existing exterior high pressure sodium, metal halide and compact fluorescent wall pack lighting fixtures with high-efficiency light emitting diode models, as well as all associated lighting controls.

The new LED fixtures are projected to reduce Laughlin's annual energy usage by 2,947 million British Thermal Units, or 863,000 kilowatt hours, saving the Air Force an estimated $81,000 per year. Based on those savings, the $910,000 project has a 12-year simple payback period. The controls will include automatic sunrise and sunset programming based on local longitude and latitude, accurate to-the-minute scheduling and battery backup.

"Each of these new fixtures has

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In this issue:

Light Bulb Comparison: Traditional Incandescents, CFLs and LEDs

Based on 2 hrs./day usage, an electricity rate of 11 cents per kilowatt-hour, shown in U.S. dollars

Source information: Energy.gov

ENABLE cont.

higher efficiency than the legacy units we have around the base," said Capt. Carly Reimer, engineering flight chief at Laughlin. "The new lights will also brighten the base because LEDs produce a cleaner, whiter, brighter light, and at a lower wattage than traditional fixtures."

Maintenance efficiencies will also be gained from the new fixtures, Reimer said.

"We won't need to have so many different types of light bulbs and replacement fixtures on the shelves anymore. And when it comes to repair, we won't require such a large inventory of parts," she said.

The ESPC ENABLE program is a Department of Energy Federal Energy Management Program initiative to provide "a standardized and streamlined process for small federal facilities to install targeted energy conservation measures in six months or less," according to the DOE website.

"ESPC ENABLE was designed to help agencies that may have smaller buildings; facilities that are sometimes left out of the normal performance contracts," said Kurmit Rockwell, ESPC manager at FEMP. "On bases with many buildings, some of the smaller facilities are included in larger, traditional ESPCs. The problem is, if you just have a building over here or over there, or don't want to assess an entire base, it is not cost effective to do a normal ESPC."

"We won't need to have so many different types of light bulbs and replacement fixtures on the shelves."

– Capt. Carly Reimer

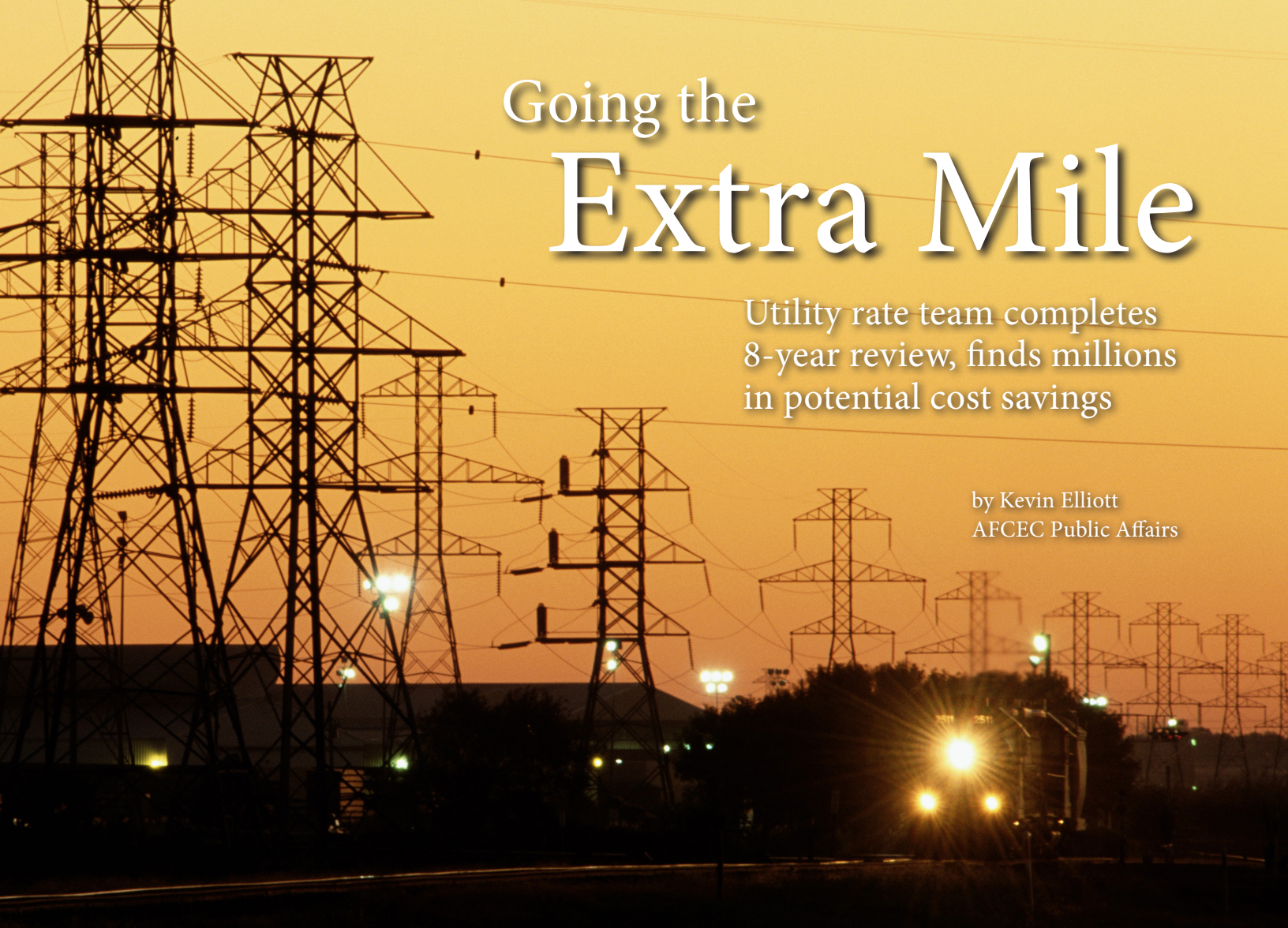
The accelerated timeframe of ENABLE projects is possible through the use of Government Services Agency Schedule 84, special item number 246-5, and its list of pre-qualified vendors and pre-negotiated pricing.

"Normal ESPCs allow a lot of customizing," Rockwell said. "The way we streamlined the ENABLE program was by standardizing the processes, there is not a lot of customization, there are a limited number of energy and water conservation measures, and templates have been developed to standardize the savings calculation and review process to make it very easy to do."

Per the FEMP website, ESPC ENABLE projects share some aspects with traditional ESPCs, including zero upfront capital costs to the agency, guaranteed energy cost savings that exceed annual payment, prescribed measurement and verification to ensure savings are achieved, and project assistance and technical support from FEMP experts.

"We're very excited about this opportunity," said Les Martin, AFCEC ESPC program manager. "Projects like this one provide substantial installation-level savings with a relatively quick project turnaround. We look forward to many more ... and, being the first ESPC ENABLE in the DOD is icing on the cake."

To learn more about the ESPC ENABLE program, visit http://energy.gov/eere/femp/espc-enable.



Going the Extra Mile

Utility rate team completes 8-year review, finds millions in potential cost savings

by Kevin Elliott
AFCEC Public Affairs

The Air Force Civil Engineer Center recently completed a groundbreaking, 8-year review of utility rates for nearly 70 Air Force bases in the continental United States and found millions of dollars of potential savings for the service.

AFCEC Energy Directorate's Utility Rate Management Team - a lead engineer, regulatory economists and support staff who analyze and negotiate utility services on behalf of the Air Force - along with utility rate consultants Exeter Associates, discovered over $22 million in possible installation utility cost reductions.

Starting in 2007, the URMT began systematically visiting Air Force installations, examining electric, natural gas, water and wastewater invoices and contracts for potential savings. The team soon realized the opportunities were many and varied.

"We found savings in multiple ways," said Nancy Coleal, URMT chief. "Sometimes it was a billing error, sometimes a simple rate change. Every situation was unique; we really had to examine each base case-by-case."

What makes this effort truly distinct, Coleal said, is that it was pro-active.

"We didn't want to wait until installations had lost significant dollars and then try to recover them. Our goal was to discover pitfalls early, educate our base utility managers and empower them to really optimize utility cost savings going forward."

To maximize those savings opportunities, the URMT had to be familiar with utility contracts and rate structures of each installation, state-by-state.

"The URMT members are truly experts in their field," said Dan Gerdes, AFCEC Rates and Renewable division chief. "Utilities contracts and rate structures are designed differently for every state - sometimes we even see significant differences within a state. Our team has to stay up on the latest changes and trends across the country in order to best help our installations. The URMT is the link between the utilities and our bases; the team does an amazing job."

Coleal's message to base utility managers is to understand their utility contracts well, know how they are derived on their invoices, and don't be afraid to reach out for help from their utility company account representatives or the URMT.

"The URMT is here to help - we have your back. If there is a question about your bill, or if you would just like to learn more about your utility contract, we are here," Coleal said.

Study finds privatizing natural gas systems reduces consumption for Air Force

By Kevin Elliott
AFCEC Public Affairs

The Air Force Civil Engineer Center recently completed an analysis of privatized natural gas system consumption levels at Air Force, Air National Guard and Reserve bases in the continental United States, and the results are better than expected.

The study examined all 16 privatized Air Force natural gas systems, comparing pre-privatization consumption to current levels.

"We evaluated consumption for the four years before the systems were privatized, and compared it to the most recent four years under privatization," said Dan Soto, AFCEC Measurement and Analysis division chief. "That revealed an average 45-percent consumption decrease since privatization. After normalizing for the other 128 non-privatized natural gas systems, we found a 32 percent reduction, on average, in consumption from our privatized natural gas systems when compared to non-privatized systems. That was much better than we anticipated."

The Army has conducted similar research, with comparable results.

"The Army did a study of 21 of their active duty bases and found a 31-percent natural gas consumption savings," Soto said. "The fact that our numbers track so closely with the Army's, when they had a larger sample size, gives me confidence in our findings."

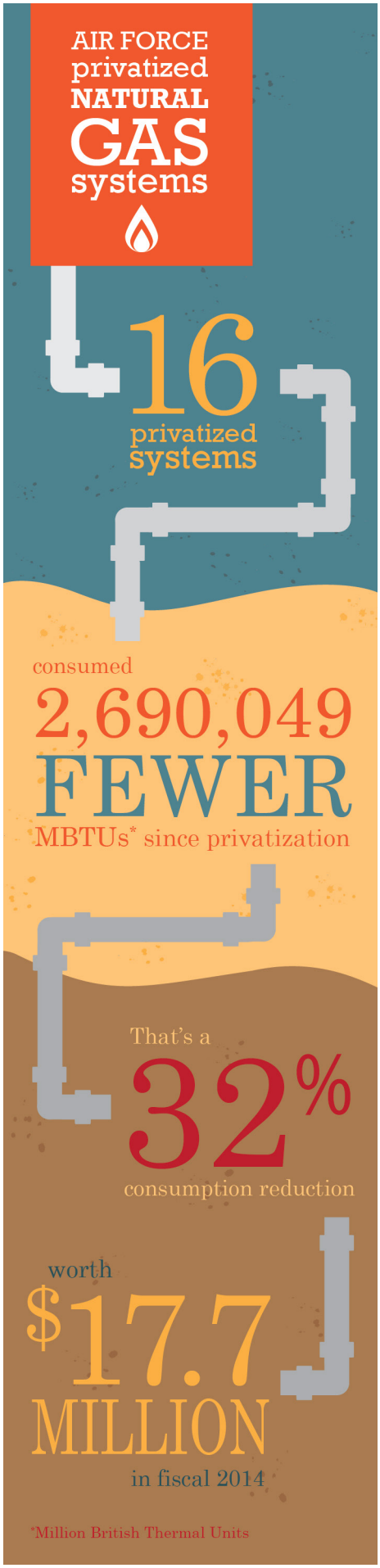
The crucial driver of the reduction seems to be the utilities infrastructure improvements required under UP contracts.

"These consumption efficiencies have been gained largely by repairing leaks," said Rick Weston, director of the AFCEC UP program management office. "Utilities privatization contracts require system compliance with current industry standards, and those standards do not allow for as many leaks as some of our systems have. So, by privatizing these utilities, we necessarily get more efficient, and safer, infrastructure. The private system owner must also maintain that infrastructure to current health and safety standards for the life of the contract."

Utilities privatization involves a "bill of sale" conveyance of Air Force utility systems to a third party, such as a municipal, private, regional, district or cooperative utility company. The average life of a UP contract is 50 years.

The 1998 Defense Reform Initiative Directive 49 mandates all U.S. military installations privative their utilities systems where feasible and economically viable. Since then, the Air Force has been in the process of privatizing most of the utility systems on its bases in the continental United States; over the last 17 years, 66 systems have been privatized, amounting to a $3.6 billion value and a cost avoidance of $511 million for the Air Force.

To learn more about Air Force utilities privatization, visit: http://www.afcec.af.mil/energy/utilitiesprivatization/index.asp.



A Resilient Future

A conversation with Edwin H. Oshiba, deputy director of civil engineers, deputy chief of staff for logistics, engineering and force protection, Headquarters U.S. Air Force

What are your thoughts on the role of the energy program in the Air Force civil engineering enterprise?

The energy program has an important role for both the Air Force and Air Force civil engineering. Providing reliable energy on our installations is integral to combat power. Simply put, without energy we cannot provide global vigilance, global reach and global power in air, space and cyberspace. To sustain our Air Force core missions and enable combat power, we must have effective, reliable utility systems and resilient energy supplies.

Another factor at play is that the Air Force is the government's biggest consumer of energy. As the largest user, it is incumbent on us to take the lead in increasing energy efficiency and reducing the energy demands on our installations.

What are your primary goals for the Air Force facilities energy program?

My goals for Air Force facilities energy are as follows:

1. Improve resiliency: provide reliable, secure, diverse and sustainable sources of energy, secure the quantities necessary to support the mission and maintain the ability to recover from energy interruptions.

2. Reduce energy demand: reduce infrastructure energy requirements while preserving and enhancing mission capability.

3. Improve and foster an energy aware culture: increase understanding of energy and its impact on the mission, and motivate Airmen to support the Air Force energy program.

4. Continue promoting third-party financing of energy

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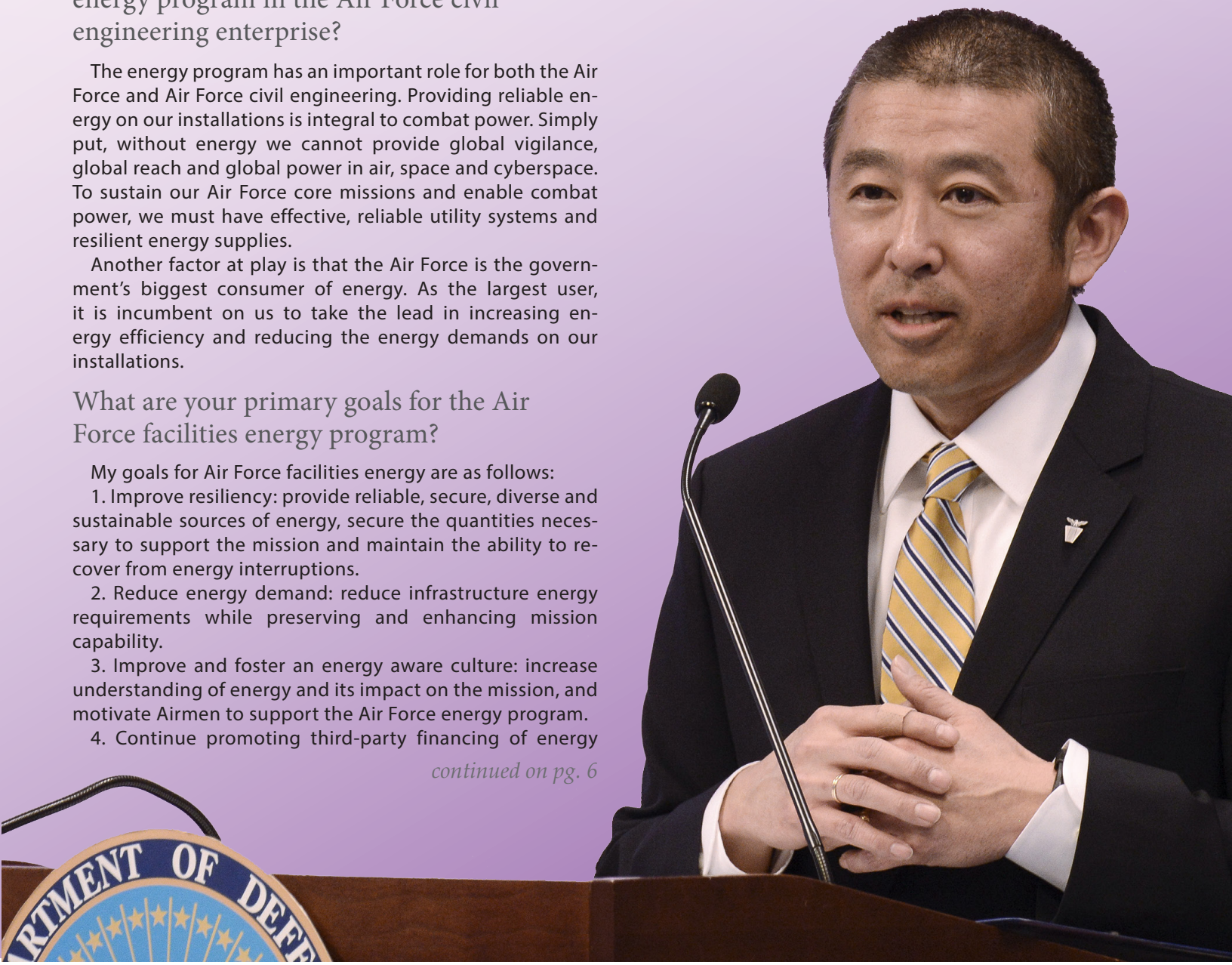

"Facilities energy is an Air Force issue, not just a civil engineer issue." - Edwin Oshiba

OSHIBA cont.

programs. Communities, public agencies and private industry want to work with us. I want to make sure we're giving our installation energy managers the tools they need to forge successful partnerships.

5. Increase the cohesiveness of the entire Air Force energy team, which includes the assistant secretary of the Air Force for Installations, Environment and Energy, air staff, major commands, the Air Force Installation and Mission Support Center, the Air Force Civil Engineer Center, installation commanders and installation energy managers, to identify new opportunities for energy resiliency and share successes and lessons learned.

6. Keep us on track to achieve the energy goals set for us.

7. Work more closely with our sister services to leverage their lessons learned — both successes and challenges.

What are some of the challenges you see facing Air Force facilities energy?

The biggest problem we have is convincing others that facilities energy is an Air Force issue, not just a civil engineer issue. We must continue to emphasize that ensuring energy resiliency requires the combined efforts of all. It encompasses the technicians who optimize heating, ventilation and air conditioning equipment and environmental controls to our buildings; the cyber professionals who work with us to harden industrial control systems infrastructure from vulnerabilities; the engineers who design energy conservation measures into new and modernized facility projects; the facility managers who identify smart, low- or no-cost energy improvements in their facilities; and the list goes on. We must make this a team sport.

Second, we need to develop an overarching facilities energy plan—an integrated, cross-functional, resourced strategy with assessable performance measures and a plan for continuous improvement.

This cannot be about singular efforts; we must have a cohesive, consistent and realistic road map for improving our energy resiliency posture. We have lots of smart people at all levels working this, and I am confident we can get to an executable long range plan that synchronizes individual pockets of excellence and identifies new opportunities before the end of the year.

If there was one message you could send to Air Force energy engineers, what would it be?

Thanks for what you do! We have placed a large burden on you by asking you to find innovative ways to improve our energy resiliency posture at a time when resources are increasingly hard to come by. Yet, you continue to come through with high impact energy initiatives that are helping us increase installation sustainability.

I would ask that you continue to broaden your horizons and think about how we can keep building creative partnerships—partnerships not just with other federal agencies, but with local communities, the private sector and our sister services so we can continue to improve our energy resiliency stance. Rely on one another, and the significant intellectual capital at AFCEC to make it better! Facilities energy is an Air Force issue, not just a civil engineer issue.

Considering the future of facilities energy, what are you most excited about, and what keeps you up at night?

Nothing keeps me up at night, because I know we have a team of trusted professionals that are doing all they can to move the ball forward on facilities energy. One thing I am excited about is the breakthroughs in technology which are decreasing the required upfront investment in alternative energy sources and are reducing the costs of implementing energy conservation measures.

Everything from batteries and energy cells to the next generation of energy efficient lighting to "smart" control systems … technology is becoming much more sophisticated at a lower cost and at an increasingly rapid pace.

We are also looking at diversifying our acquisition tools to increase the size of our "pipe" when it comes to executing energy savings performance contracts.

Finally, I'm excited about how we're seeing more avenues for leveraging third-party financing through enhanced use leases, which provide even more options for proliferating energy resiliency initiatives. Overall, the future is extremely bright!

Anything else you would like to add?

I know it's difficult to find the time outside your many responsibilities to share information, but I want to encourage you to tell the AFCEC energy team about your successes and challenges. The AFCEC Energy Directorate, as well as your installation's public affairs team, can help get the word out around the Air Force. We can all benefit from each other's experiences, good or bad.

Finally, while it's important to do all we can to meet energy goals, the energy program is really about enabling combat power in air, space and cyberspace. Our ability to secure national security is closely aligned with our ability to secure energy for our operations today, as well as for the future. Every contribution—big and small—matters. It's Airmen—not machines—that ultimately secure energy in the quantities and qualities required to enable Air Force core missions.

I'm counting on you, and I know you'll continue to lead the way!

Tinker releases notice of opportunity for logistics complex ESPC

By Kevin Elliott
AFCEC Public Affairs

The Defense Logistics Agency recently released a notice of opportunity for an energy savings performance contract, or ESPC, for the Oklahoma City Air Logistics Complex at Tinker Air Force Base, Oklahoma.

The notice invites the 16 energy service companies, or ESCOs, that are currently qualified by the Department of Energy to conduct ESPCs of this size, to submit written responses of their intent to pursue the project.

The proposed scope of the Tinker ESPC includes at least 60 buildings at the OC-ALC, totaling more than 10 million possible square feet, according to the notice. The company selected to develop an investment grade audit of the project will be asked for a comprehensive analysis of the complex to identify opportunities for maximum energy and water savings, and renewable energy production, with a particular emphasis on industrial process improvements.

"The idea behind this project is to look at our facilities in a very holistic manner," said Joseph Cecrle, energy manager at the OC-ALC. "All the ESCOs are proficient at traditional energy-efficiency upgrades. We will include those types of projects, but in this notice we're asking for special attention to industrial process improvements that will increase efficiencies across all of our systems. We want to address every possible opportunity."

This is not the first ESPC at Tinker. In 2012, an $80.6 million steam plant decentralization contract was awarded to Honeywell, Inc. The project involved shutting down three central high pressure steam plants, improving a fourth and fitting 56 individual buildings on the base with high-efficiency, natural-gas fired heating equipment. Construction is nearly complete, and the effort has reduced Tinker's natural gas consumption by 30 percent.

"We're excited about this new ESPC opportunity at Tinker," said Tom Laney, ESPC project manager at the Air Force Civil Engineer Center; the agency responsible for managing the Air Force's ESPCs. "Tinker is a forward-thinking base. Its first ESPC was very successful; this one has the potential to achieve significant energy efficiency gains for the Air Force."

The OC-ALC is one of the largest units in Air Force Materiel Command. The complex performs programmed depot maintenance on the C/KC-135, B-1B, B-52 and E-3 aircraft; expanded phase maintenance on the Navy E-6 aircraft; and maintenance, repair and overhaul

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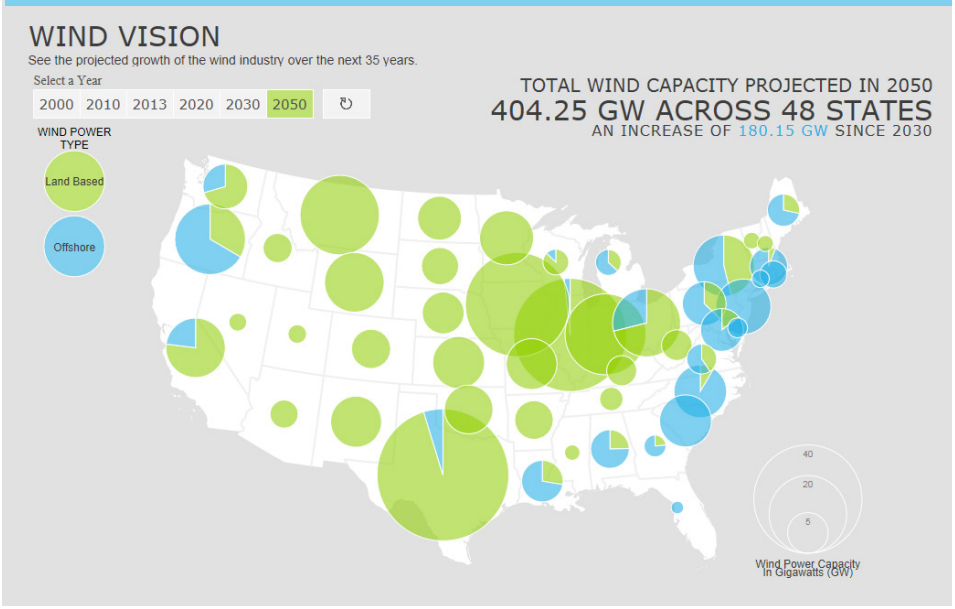
Photo: From left, Tinker engine test cell operators Roy Kniffin and Arthur Anderson prepare an F117 engine for testing at the Oklahoma City Air Logistics Complex at Tinker Air Force Base, Oklahoma. The OC-ALC energy savings performance contract has a possible scope of 60 buildings at the complex, totalling more than 10 million square feet. (U.S. Air Force photo/ Margo Wright/Released)

of F100, F101, F108, F110, F117, F118, F119 and TF33 engines for the Air Force, Air Force Reserve, Air National Guard, Navy and foreign military sales.

In November, Tinker activated the Air Force's first depot-level overhaul and repair line to support the surveillance and attack missions of the MQ-1 Predator and MQ-9 Reaper unmanned aerial vehicles. In February officials announced the acquisition of 158 acres of land to stand up a depot maintenance facility for the Air Force's next-generation aerial refueling aircraft, the KC-46A Pegasus.

"One of the Air Force Sustainment Center's goals is to transform organic repair facilities into the 'Complex of the Future,'" Cecrle said. "This ESPC is a great opportunity for our organization to invest in that vision."

American wind energy poised for growth



According to the Department of Energy website, wind energy accounted for 33 percent of all newly installed electricity generation capacity in the years spanning from 2006 to 2013. The United States now gets about 4.6 percent of its electricity from wind power.

Click the graphic above to see future wind energy potential across the continental United States, according to the DOE's new Wind Vision Report.

Industry news: Elon Musk announces home battery system

Tesla's founder and chief executive officer Elon Musk recently unveiled the Powerwall, a new line of residential battery storage products that he says will revolutionize the sustainable energy industry.

According to the Tesla Motors website, Powerwall is a "home battery that charges using electricity generated from solar panels, or when utility rates are low, and powers your home in the evening."

"We have this handy fusion reactor in the sky called the sun," Musk said at the announcement event in Los Angeles. He believes that using it to at least partially power our homes is "something that we must do, we can do and we will do."

To view the entire Powerwall announcement event, click the button below.

Click HERE >>

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