

"Make Energy a Consideration in All We Do"

ENERGY express

The Air Force Civil Engineer Center Energy Newsletter

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Top 10 Facility Energy Accomplishments of 2012

Jennifer Elmore
AFCEC Public Affairs

The fiscal year 2012 Annual Energy Management Report is making its way to Congress and lawmakers will likely be impressed by Air Force facility energy accomplishments. The Air Force Civil Engineer Center submitted the report to the Office of the Civil Engineer in November. It has since been sent to the Office of the Secretary of Defense, which will forward the results to the Department of Energy and ultimately Congress. Highlights from the FY12 report show the Air Force met all four of its major facility energy and water goals; signed a deal to build its largest solar array to date; and developed a Net Zero Implementation Plan. Here's the top ten accomplishments of 2012 abstracted from the report.

1. Energy and water goals surpassed:

The Air Force's dedication to a strong facility energy management program that accounts for all energy and water consumed at all installations has made it a leader in the Department of Defense. The Air Force reduced energy intensity 21.2 percent (goal: 21 percent); reduced potable water intensity 18.1 percent (goal: 10 percent), reduced non-potable industrial, landscaping and agricultural water consumption 4.6 percent (goal: 4 percent); and renewable electricity accounted for 5.5 percent of the total electricity consumed (goal: 5 percent).

2. Energy Savings Performance

Contract program revived: In July 2012, several years of hard work paid off with the award of an Energy Savings Performance Contract at Tinker Air Force Base, Okla. The complicated, \$91 million ESPC uses third-party funding to decentralize three central boiler plants, replacing them with smaller, more efficient boilers in 70 buildings. When complete, this project will save enough energy to power 12,242 homes annually. Utility and operation and maintenance savings over the next 20 years will be used to repay the project costs. The Air Force also held an ESPC industry Day and subsequent Rapid Improvement Event to streamline the ESPC process to 12 months. It used to take three to four years. Several key improvements to the acquisition process were also identified and will be incorporated into revised guidance for Air Force civil engineers.

3. 14.5 megawatt renewable solar array awarded:

In August, AFCEC helped secure an agreement with SunEdison, LLC to design, finance, build, operate and maintain a 14.5 megawatt photovoltaic array on 170 acres of land at Davis-Monthan AFB, Ariz. The power purchase agreement provides electricity to Davis-Monthan at a reduced rate for 25 years saving the base approximately \$500,000 a year in utility costs. The project will provide 35 percent of the energy needed

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Utility Privatization contracts can provide major cost avoidance for the Air Force. Pictured here is an electrical system at Tyndall AFB, Fla. which was privatized in 2011. (U.S. Air Force photo/Mr. Eddie Green)



Energy Accomplishments

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to power Davis-Monthan. It will be slightly larger than the Nellis AFB, Nev., photovoltaic solar array built in 2007.



This solar array installed at AFCEC, Tyndall AFB, Fla., is just one of 212 renewable energy projects in operation on 89 installations. It is a small example of how the Air Force plans to meet goals in the One Gigawatt Renewable Energy Plan and the Net Zero Implementation Plan. (U.S. Air Force photo/Eddie Green)

4. Advanced meter reading system

awarded: Eighty Air Force bases will receive advanced meter reading systems over the next two years. AFCEC oversaw the award of a \$33 million contract to provide the standardized solution for reporting electricity, water, steam and natural gas consumption. AMRS has the potential to save the Air Force up to \$25 million a year in utility costs, and will provide base level energy staffs the information needed to ensure buildings are operating as efficiently as possible.



This electric meter is one of thousands across the Air Force that will soon be hooked to an advanced meter reading system. (U.S. Air Force photo/Eddie Green)

5. Sustainable Infrastructure

Assessments Implemented: The Air Force bundled building assessments into SIAs to combine real property inventories and facility assessments for energy and asset management. AFCEC awarded a contract to complete energy audits and real property inventory, equipment, condition, high performance sustainable building, and space utilization assessments at 63 installations. The data collected will be used to support decision making, financial management, and future reporting requirements for capital investments and audits.

6. OSD approves Air Force re-

baseline request: AFCEC collected data, submitted a baseline revision for the Air Force 2003 energy baseline, and gained approval from OSD. It is a significant accomplishment because the congressionally mandated energy intensity goal of three percent reduction each year with a total reduction of 30 percent by 2015, is based on the 2003 'baseline year.' In 2003, energy was just beginning to be a major focus for the military and as a result, there wasn't clear guidance on collected energy intensity data. The guidelines in place were vague and subject to different interpretations. Now every base is using the same criteria and has resubmitted 2003 data using the improved guidelines and a new reporting system.

7. New renewable energy process

developed: The reorganization of the Air Force Real Property Agency, the Air Force Civil Engineer Support Agency, and the Air Force Center for Engineering and the Environment into AFCEC highlighted the

need for a streamlined renewable energy process. AFCEC hosted an Enhanced Use Lease/Power Purchase Agreement Rapid Improvement Event in San Antonio, Texas, to create a single process for EULs and PPAs called the Renewable Energy Process. Participants agreed on standardized terms and a single set of phases and milestones.

8. One Gigawatt Renewable Energy Plan developed:

The Air Force, along with the Army and Navy, has a plan to develop over one gigawatt or 1,000 megawatts of renewable energy on Air Force installations by 2016. This ambitious goal will exceed all the legislated mandates of the Energy Policy Act of 2005 and 10 United States Code 2911.

9. Net Zero Implementation Plan

developed: The Air Force developed a draft Net Zero Implementation Plan to leverage, coordinate with and integrate efforts already underway throughout the Air Force. The draft plan takes into account how the Air Force currently managers and works to reduce energy use, water use and waste generation, and suggests ways to reach a net zero status.

10. Utility Rate Management Team

saved millions of dollars: AFCEC's Utility Rate Management Team completed reviews of utility contract acquisitions at 17 installations and identified potential savings of more than \$9.5 million. The URMT also supported rate negotiations and interventions in Alaska, Arizona, California, Colorado, Florida, Missouri, Nevada, Texas and Utah preventing \$3.4 million in utility bill increases.



This is one of three central heat plants at Tinker AFB, Okla., that will be decentralized using an Energy Savings Performance Contract. The project could reduce natural gas consumption 40 percent and save up to \$7 million. (U.S. Air Force photo/Bill Dalky)

Utilities Privatization looks to the future

Amy Ausley
AFCEC Public Affairs

The Air Force is showing its long-term commitment to the Utilities Privatization program and has released a schedule of utility systems to be reviewed through FY21. The list comes from the office of The Air Force Civil Engineer, AF/A7C-2.

Many of the systems on the list were previously deferred or exempted. With recent policy changes and a shift in economics, privatizing some of these systems might now be cost effective and so they are getting a closer look.

A certain number of systems are reviewed and evaluated each year to determine if they are good candidates for UP. Previously, many of those systems were put on a deferred list or listed as exempt because they didn't meet the government requirement to be at least ten percent more cost effective if privatized. A recent policy change removed the ten percent requirement. The policy change along with changes in the economy means many of those systems can be reevaluated.



Power sub stations like the one pictured here at Tyndall AFB, Fla., need routine maintenance and repairs to continue working properly, but sometimes those routine repairs are delayed. Utilities privatization contracts ensure a system is properly maintained and running smoothly. U.S. Air Force photo/Eddie Green)

There are many factors that go into privatizing a utility system but one of the biggest is the comparison of the government's "should cost" estimate, which is what it will cost to maintain the system, to the cost to pay a contractor to maintain it. Maintenance on a base utility system often is postponed when there is work needed elsewhere. When the system isn't maintained properly over time, it can result in major issues and costly repairs. Those funds come out of the base's operations and maintenance budget. Rick Weston, acting Utilities Privatization Division chief at the Air Force Civil Engineer Center, Tyndall AFB, Fla., compares it to maintaining a car engine.

"It will cost you a lot more to replace the car engine than it would to perform routine maintenance over the lifetime of the car," he said. "It costs the Air Force a lot more money for an unexpected or unplanned repair or replacement than it does to maintain the system all along."

Other criteria considered when determining whether to privatize a system include the condition and age

of a system. Not every system on this list will be privatized. Some may be determined to be cost effective in their current condition.

Privatizing the system means the contractor owns the equipment for the utility, such as pipes or cables. The contractor does not own the commodity delivered by the utility system. The Air Force then pays the contractor a yearly fee which becomes a "must pay" bill.

There are currently 200 privatized natural gas, water, electric and sewer systems in the Air Force providing a cost avoidance of over \$2 billion for the life of the contracts.

Due to the massive amount of work that goes into evaluating a utility system for privatization, only about 40 can be assessed a year. There were already 107 systems scheduled for evaluation through FY15. Now 170 previously deferred or exempted systems have been added back into the mix beginning in FY16 and continuing through FY21. It's a long range plan that could potentially provide the Air Force with big additional cost avoidance numbers.

'Early Communication' makes EUL, PPA programs more successful

Eric M. Grill
AFCEC Public Affairs

Following up on a October 2012 rapid-improvement event to streamline the Air Force Enhanced Use Lease and Power Purchase Agreement programs, the Air Force turned to private industry Jan. 15 for a business partnership discussion.

The talks were held during the Association of Defense Communities Professional Development Forum that took place Jan. 14-16 in San Antonio.

During an open discussion with potential developers and military community leaders, Brian Brown, Air Force Civil

Engineer Center Installations Center of Excellence Strategic Asset Utilization Division chief, said the Air Force must have civilian sector participation if the process is to be successful.

"We like working with communities and we like embracing their ideas because usually the communities already know what will and won't work," he said. "Being a government entity, we are staying as close as we can to understanding the real world out there, and understanding the pains and tribulations the developer goes through (during the EUL process)."

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Early Communication

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Managed at the AFCEC Installations Center of Excellence here, EULs are long-term lease agreements between the Air Force and private developers to lease non-excess Air Force property in exchange for in-kind consideration.

An example of in-kind consideration is the construction of a wastewater treatment plant on Nellis Air Force Base, Nev., said Martin Briseno, AFCEC EUL program manager. The city of North Las Vegas is leasing land under the EUL program for the treatment plant, which will provide water for irrigating base property in addition to North Las Vegas.

Besides construction of new facilities on leased real property, Briseno said in-kind consideration also can enable payment of utility services, real property maintenance and other services relating to activities on the leased property as the Secretary of the Air Force considers appropriate.

Power Purchase Agreements, managed by the AFCEC Energy Directorate at Tyndall Air Force Base, Fla., are contracts between installations and commercial developers to use Air Force property with the Air Force purchasing the energy generated, which spans the range of all renewable technologies.

The Air Force has worked hard to refine a process to be responsive and quick to act so a developer can start working, Brown said.

“We learn from you – the developers – and then we reengineer our processes to

get to a place where enhanced use leases and power purchase agreements can be accomplished,” he said.

Timeliness is something the Air Force changed to make the processes more manageable, Briseno said.

“If we’re not reactive enough to proposals, we might get a market shift that now makes the project not viable,” Briseno said. “Among the biggest challenges we face is communicating what Air Force requirements are so the community and developers know exactly what we’re looking for.”



Brian Brown, Air Force Civil Engineer Center's Installations Center of Excellence Strategic Asset Utilization Division chief, answers questions from military community leaders and potential developers about the Air Force's role in Enhanced Use Lease and Power Purchase Agreement proposals during an open-forum discussion here Jan. 15. (U.S. Air Force photo/ Eric M. Grill)

Disconnects between Air Force and industry expectations along with unexpected environmental, cultural and political challenges are some of the most common surprises, he said.

“We need to interact with industry sooner and better,” Briseno said.

Tom Swoyer from Infinity Development Partners discussed why developers and communities work with the federal government to lease real property.

“The land the government offers is valuable to the local community for development because it’s usually a large parcel of land and we only deal with a single owner versus sometimes multiple owners of land in the local community,” Swoyer said. “In most states leased land from the government is also exempt from property tax, which from a business standpoint is more enticing as well.”

For more information about EULs, go to AFCEC’s EUL website at <http://www.afcec.af.mil/eul/>.

For more information on Power Purchase Agreements, go to AFCEC’s Renewable Energy website at <http://www.afcec.af.mil/energy/renewableenergy/index.asp>



Reach Back Center
 (888) 232-3721 DSN 523-6995
AFCEC.RBC@tyndall.af.mil

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Please send your comments, story ideas, and photos to amy.ausley@tyndall.af.mil, DSN 523-6492.

AFCEC Director Mr. Joe Sciabica

AFCEC Deputy Director Col David L. Reynolds

Director of Energy Mr. Rick Stacey

Public Affairs Ms. Amy Ausley
 Ms. Jennifer Elmore

Graphic Designer Ms. Caitlin Lowrey