

Monitoring energy savings on JBLM

By Cathy Hamilton-Wissmer, JBLM Directorate of Public Works October 9, 2018



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Patrick McLaughlin, member of the Joint Base Lewis-McChord Directorate of Public Works Energy team, presents on energy monitoring results from the Environmental Security Technology Certification Program (ESTCP) research grant. Behavior change contributed to average daily energy use reduction by 20 percent. *(Photo Credit: Cathy HamiltonWissmer, JBLM Directorate of Public Works)*
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Energy security is key to mission success on Joint Base Lewis-McChord. Wise use of energy extends reach and resiliency, reduces sustainment demands, and frees Soldiers and Airmen from support tasks to focus on the primary mission. JBLM spends almost \$20 million on energy annually, and saving energy is serious business on the installation.

In 2016, JBLM partnered with Belkin International Inc. and Lawrence Berkeley National Laboratory over 12 months to answer the question: can Belkin identify major loads and assess energy savings remotely?

Funding was provided by a research grant through the Department of Defense's Environmental Security Technology Certification

Program (ESTCP). Two buildings were identified for use in the study: a windowless office that hosts a wide variety of computer equipment along with a recently built barracks.

Belkin's Echo Technology connects to the electric meter to monitor the electromagnetic interference, or "noise" emitted by electrical appliances plugged into wall outlets. Its nonintrusively checks the building's electrical load using a high-sensitivity meter that searches for minute changes in power use to identify specific equipment and its use.

This technology requires collaboration with the power company and an electrician to set the meter, making it a good fit for significant energy users such as government, large businesses or university settings.

Behavioral change makes the difference in reducing energy, was the takeaway success of this energy monitoring study.

"Real success came from the recommendations that Belkin had for us when they set up the study," said Bruce Parent, manager of the Program Executive Office Command Control Communications Tactical Field Support Staff. "We followed those and looked at all noncritical plugged in items, such as shredder, printers, microwave and monitors. It became a part of the habitual close out procedures at that end of the day to pull the plugs on those things."

At the second site, there was no real change to the barracks baseline energy use during the period of the study where the heat, lights and computers are on all the time.

"Behavioral changes can reduce approximately 16-18 percent of energy consumption," said Sakhawat Amin, with the JBLM Directorate of Public Works energy program. "The success of any conservation effort depends on team work and gains momentum when leaders are motivated. We learned some important information about typical JBLM facilities during this study, most of them have a high base load (minimum level of energy output) since they never sleep. These buildings use energy even at night when they are mostly unoccupied."

So, what's next for energy monitoring on JBLM? The study group hopes to continue their research and are looking at a daycare and a motor pool in 2019.

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