

CUSTOMER PROFILE

HICKAM AIR FORCE BASE

Hickam Air Force Base

CHALLENGES

- Meet DoDI 4170.11 mandate
- Manual meter reads in hard to reach and security sensitive locked areas
- No easy way to assess energy usage in order to reduce energy consumption

SOLUTION PROVIDED

- 15-minute detailed, secure, on-line energy reads
- DoD compliant AMR equipment installed in industrial and residential buildings

RESULTS ACHIEVED

- Projected cost savings upwards of 10% once load profiles are compared with work hours
- Accurate picture of energy usage
- Read electric meters seamlessly without interruption
- Reduce labor costs reading meters by hand
- Hickam AFB is the first in the DoD to utilize a digital system that provides advanced security, reliability and flexibility in addition to meeting DoDI 4170.11 mandate

HICKAM AFB USES ADVANCED AMR TO TRACK TENANT ENERGY USAGE AND PROMOTE ENERGY CONSERVATION

With 220 buildings covering close to 5 square miles, Hickam Air Force Base (HAFB) is home to the 15th Airlift Wing, Hawaii Air National Guard and PACAF Headquarters. Every month military personnel from other divisions and branches of the military stay at Hickam AFB for training and conferences. Serving as America's 'bridge across the Pacific' and a major historic air base adjacent to Pearl Harbor, Hickam provides housing and facilities necessary to complete all scheduled exercises and activities for its tenants.

For many years the 15th Civil Engineering Squadron (CES) has been searching for an Automatic Meter Reading (AMR) system to read the electric meters on base. There were many options to consider, but all options needed to bring energy cost under control, promote conservation and comply with DoD requirements.

According to the DoDI 4170.11 mandate dated November 22, 2005; by the year 2012, electricity, natural gas and water must all be metered with interval reading capabilities for all appropriate facilities. It further states that metering data must be incorporated into existing energy tracking systems and made available to facility and installation energy managers. It is further expected that this management of data would inevitably lead to significant energy and cost savings.

THE CHALLENGES

The challenges Hickam faced included dispersed meter locations and the labor involved with reading meters in areas with high security. Meter readers in these areas needed to have special secret clearances and then there was a substantial amount of labor involved.

In addition, energy usage and consumption was out of control with no way to determine who was responsible. Energy managers could not accurately identify high consumption areas or when high consumption occurred between reads. Tenants were free to leave lights on when leaving a facility or a hangar without a second thought. As a result, there was no accountability or concern for conservation among the tenants and Hickam had no choice but to pick up the tab.

THE SOLUTION

After considering other options, Hickam's CES enlisted the services of JL Lichti, System Solutions Analyst of the PL Group. PL Group (PLG) is a certified sales partner for Advanced AMR Technologies (AAT), a Peabody, MA, based provider of wireless AMR and Energy Management solutions. PLG recommended AAT's innovative wireless mesh network that requires no phone lines, cellular or radio towers to communicate data. It is a two-way, long distance, licensed radio frequency system that provides analysis as well as remote meter reading. PLG and

AAT demonstrated the system to CES in Feb 2006 and a decision was made in August 2006 that this system met their needs. AAT delivered the startup system Nov 2006. "The AAT system meets all the requirements set forth by the initiatives and will be completed long before the 2012 deadline", according to John Lichti of PLC.

After evaluating traditional AMR solutions, HAFB reached its goal to meet the initiatives beginning in 2006 by installing Advanced AMR Technologies (AAT) AMR system on the most important facilities on the base. According to Lichti, "Hickam was not ready to take such a big leap to go with Power Line Carrier (PLC) technology for what they considered an unproven technology. They wanted something more convenient than the Itron drive-by system, and security concerns related to Internet based solutions was something they certainly did not want to deal with. They found cellular AMR systems to be too expensive and if the cellular tower should go down, you are dead."

HOW IT WORKS

The AAT system is composed of three primary components.

- (1) Meter Interface Units (MIU) connected to the meter which directly reads the required information (i.e. kWh, kW, and instances kW). Each MIU, in addition to reading meter data, is a radio transceiver, sending and receiving data to and from other MIU's.
- (2) Concentrators relay data received wirelessly from the MIU's to the Energy Information and Control System (EICS) server via the Internet where the data is available for analysis by CES. In turn, com-

mands from the EICS server can also be sent back to MIU's.

- (3) The EICS server platform's function is to collect meter reading data every 15 minutes, send commands, store and analyze data, display the energy in graph form and provide data in a billing format currently in use by HAFB.

BENEFITS

- With AAT AMR technology, Hickam meets all DoD AMR requirements while accurately and efficiently keeping track of energy usage.
- The data collected through remote meter reads is easily exported to an Excel spreadsheet or other billing programs.
- Remote reads significantly reduce labor costs and travel time.
- The project cost savings with the AMR system is projected at 10% of the total kWh rate once load profiles are compared with work hours.
- Hickam has been able to capture lost revenue by billing tenants for the electricity.
- Reduced energy usage and consumption will help the environment.
- What was once a cost center for Hickam has the potential to make money by reducing unnecessary consumption of energy
- The AAT system is easy to set-up and configure with no wires, phone lines, towers or cabling required.
- The direct register read of the L&G AXS4 meter provides more accurate meter reads than conventional pulse read AMR systems.

ABOUT ADVANCED AMR

AAT is a division of AES Corporation. In the early 1990s, responding to a U.S. Government request to develop a wireless communications network that worked in remote and often hostile parts of the world, AES Corporation created and patented a long range 2-way wireless mesh network that requires no dedicated radio towers, phone or cellular services. The fast communications, high reliability, easy installation, and low cost of ownership quickly made AES a leader in the Fire and Security Alarm industry. AES-IntelliNet products also provide Home Arrest Monitoring, Vehicle Tracking, and Vending Machine Management. In 2000, AES Corporation introduced Advanced AMR Technologies to meet the needs of the Energy Management industry with energy monitoring, reporting, and control products. AES mesh radio-based products are deployed in hundreds of thousands of locations in over 55 countries around the world. AES Corporation is not affiliated in any way with the NYSE listed AES Corp. of Virginia.

ABOUT PL GROUP

PLG was founded in 2003 and its employees possess extensive knowledge on AMR and electric utility metering. Specializing in sales and service for the utility industry has provided considerable insight into industry needs and how to deal with today's utility requirements. The utilities range from large to small, investor owned to municipality owned, and private sector such as trailer parks, universities and military bases. These utilities will utilize PLG AMR solutions to monitor and control their energy consumption at an optimum level.



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