

WALTON OUTREACH

APPLIED SUSTAINABILITY CENTER



"Team Little Rock's sustainable energy practices are a way of life."

-Dr. Robert L. Straitt
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An Energy Efficiency Success Story:

Little Rock Air Force Base

Project Overview:

Recently, the Air Force reduced its facility energy intensity by more than 30 percent in a 20-year period ending in 2005. The current goal is to reduce facility energy use an additional 30 percent from 2005 to 2015 in using 2003 as a baseline mandated by the federal government. Little Rock Air Force Base realizes energy is a valuable resource and made it a goal to reduce energy consumption.

In order to achieve the energy goals the Air Force has established a Resource Efficiency Management Program, with a Resource Efficiency Manager assigned to bases like Little Rock AFB. The Resource Efficiency Manager at Little Rock AFB is responsible for implementation of projects that will result in reductions of annual energy costs, specifically in those areas where technology would allow for greater efficiencies of energy usage, while having no

adverse impacts on the daily operations or quality of life on the base. To meet this goal, energy efficiency projects are identified and funded, progress is measured and reported, education programs are put in place, and renewable energy technologies are planned to create a clean and sustainable energy island, free of imported fuels.

The outcomes of this project have exceeded expectations. In FY10, this effort resulted in a stellar 34.4% reduction in energy intensity (five years ahead of schedule requirements) and an outstanding 54% reduction in water consumption (more than ten years ahead of scheduled requirements). Little Rock AFB is presently meeting or exceeding all energy intensity reduction goals.

Little Rock Air Force Base

Location: Jacksonville, Arkansas

Without EE Retrofit: \$12.8 Million

With EE Retrofit: \$8.3 Million (Actual)

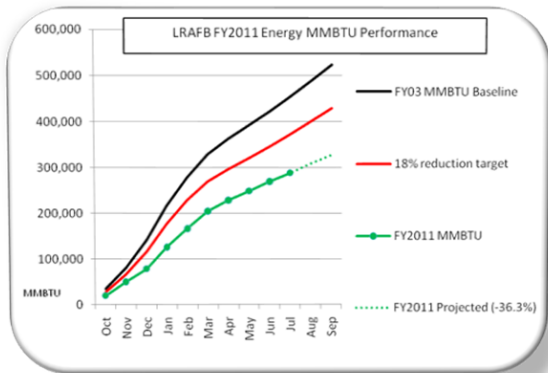
Savings: \$4.5 Million FY2010, (34.4% reduction)

Energy:

In 2007, LRAFB used approximately 500,000 MMBTU's of energy.

The goal for 2011 was to reduce energy usage by 18%, to a target of 400,000 MMBTU's used. They exceeded this goal, using only 300,000 MMBTU's, a 36.3% drop in energy usage.

Energy Usage Reduction

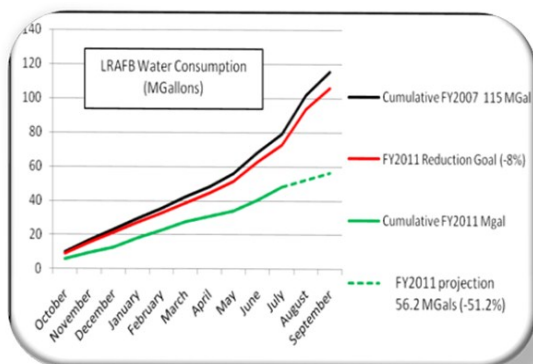


Water:

In 2007, LRAFB used 115M gallons of water.

The goal for 2011 was to reduce water usage by 8%, which would result in 105.8M gallons used. They exceeded this goal by using only 56.2M gallons in 2011, a 51.2% drop in water usage.

Water Usage Reduction



Strategies for Success

- Installed 75 Advanced Meters (AMRs), to provide baselines to validate conservation efforts.
- Expanded EMCS to monitor power in 50 buildings outside of AMR network, savings \$100k/year
- Installed 23 high efficiency solar panels on public address system, generating capacity that exceeds 4.6 MWH (solar) per year.
- FY2011 water use to date cut by 73% from baseline.
- Hybrid fuel: using E85 ethanol fuels on base; FY2010 goal 20%, achieved 350% of goal.
- Ground fuel use down 17% below baseline; FY2010 target fuel reduction 4%.
- 17 E-85 Hybrid Fuel Vehicles (3% of fleet)
- 252 Bio-Diesel Vehicles (49% of fleet)
- Energy Management Control System (EMCS) takes control of HVAC systems in 90 buildings, controls setpoints, minimizes HVAC at night and on weekends, optimizes air recirculation systems with Direct Digital Controls to ensure energy conservation.
- 14 Energy conservation projects approved, funded, and underway resulting in an annual savings of \$1,312,000 and 75,575MMBTU (1 Million British Thermal Units).
- Little Rock AFB maintains and operates a complex recycling program with multiple components that include collection, separation, and processing, market research, and direct selling of recyclable materials. It is responsible for processing over 2,300 tons of material in FY2010.
 - 757 tons of scrap metal recycled
 - 1,060 tons of paper product recycled
 - 44 tons of plastic recycled