

Case Study—Continuous Energy Improvement



Energy Management Objectives:

Clovis Unified takes a pro-active approach to managing energy use at its schools and district facilities in order to be a good steward of both its financial resources and the world's environment. In an effort to achieve this goal, the District's energy conservation program was developed with assistance from Energy Education Inc. (EEI), and supported by Strategic Energy Group (SEG) and since June 2008 has decreased energy consumption in Clovis Unified by **20.3%**. This **20.3%** reduction equals **40,038,912** kWh of electricity; **1,065,613** Therms of Natural Gas; and **222,026** gallons of water which translates in a reduction of Greenhouse gases equal to **4,218** fewer automobiles on the highway annually, or **601,134** tree seedlings planted and grown for 10 years.

The District's energy management staff has three primary goals; to maintain comfort and safety in occupied facilities, eliminate energy waste and save dollars. During the period of July 2010 to June 2011, the District's energy education efforts, which includes utilizing the tools and resources provided and supported by Strategic Energy Group, the District was able to accumulate a cost avoidance of more than \$2.3 million (the cost **equivalent** of approximately 24 teaching positions).

The SEG approach was to help develop a **Continuous Energy Improvement Program** centered around a **Strategic Energy Management Plan** and included 5 focus areas:

1. **Energy Policy Implementation:** Supported documenting the energy goals, demonstrated how CEI fit into the school districts' structure, and help unite a systematic approach to quantify the success/failure of energy management. Clovis Unified improved energy efficiency continuously by establishing and implementing effective energy management programs that supported student activities while providing a safe educational environment.
2. **Employee Energy Awareness Program:** Helped proactively engage ideas from staff concerning reduction of energy waste and included success metrics. The main objective was to raise employee and student engagement surrounding their activities that directly influenced the amount of energy consumed by systems and the schools. In addition, the EAP confirmed the school districts' commitment to conserving resources and engaging all employees in the continued success of the Clovis USD.
3. **Annual Goals and Objectives:** Included a baseline and key performance indicators (KPI's) to measure progress.
4. **Planned Actions:** Consistently reviewed, revisited, and revised inputs, outputs, Capital, O&M and behavioral actions.
5. **Sustainability:** Supported a cross functional group of engaged employees that is sponsored by the **District's school** Superintendent.

Clovis Unified's Approach to Success:



"Be the best you can be in

Mind, Body and Spirit!"



Manage Comfort & Safety in Occupied Areas

- Coordinate facility use with operation of lighting and HVAC equipment.
- Monitor operational efficiency of equipment.

Eliminate Energy Waste

- Audit every building at least once per week.
- Track and analyze consumption for building efficiency.
- Maintain the guidelines described in Governing Board Policy 5201 – Energy and Water Conservation Program.
- Pursue third party accreditation of energy conservation through the Environmental Protection Agency's [Energy Star Building Label](#) for Clovis Unified facilities.

Part of the success is due to the Clovis USD leveraging PG&E's **Retrocommissioning (RCx)** program and the tools and resources provided by SEG to target upgrading the energy management of various schools in the district, improving the educational environment and increasing staff efficiency while reducing energy consumption and

Save Dollars

- Minimize consumption and demand charges throughout the District's facilities.
- Evaluate usage trends for abnormalities and pursue resolution of overcharges (Since June 2008 the department has recovered more than \$60,000 in billing errors.)
- Maximize the District's use of rebate and grant programs to reduce utility expenses.
- Costs for the District's energy management program and staff are paid with money saved through energy reductions.

Because of the large energy demands of a school district the size of Clovis Unified, it is their financial and environmental responsibility to make every effort to reduce their energy footprint.

The Outcome:

The Clovis Unified School District finished the **2011/2012** school year with a total Cost Avoidance of **22.6%** which was equal to **\$2,291,556**. The expected energy costs were **\$10,146,635**.

Cost avoidance is the amount the district would have spent without an energy management program in place. The base year (2006-2007) usage is adjusted for changes in weather, equipment, schedules, occupancy, and utility rate increases. Energy costs have remained flat for the past 5 years in spite of:

1. A 20% increase in district footage (from 3.6 to 4.5 million square feet (+**933,000** sq ft)
2. A **7.3%** increase in student enrollment from 2006/07 (37,101 students) to 2010/11 (**38,956** students)
3. An average electrical rate increase of 2.5% per year.
4. An increased electrical load due to the addition of smart boards and additional computers to classrooms.