



Fresno Unified School District Sees the Light



A FUSD portable classroom with a completed lighting upgrade

PROJECT FAST FACTS

Number of T-8 Fluorescent
Fixtures Installed
12,106

Number of Portable
Classrooms Retrofitted
984

Estimated Annual
Cost Savings
\$365,374

Estimated
Simple Payback
1.6 years

Estimated Annual
Kilowatt-hour Savings
2,297,948

The Challenge

Fresno Unified School District (FUSD) is the fourth largest school district in California. The district serves over 79,000 students at 61 elementary schools, 19 middle schools, and 8 high schools. With so many facilities—but limited financial resources—FUSD is constantly challenged to reduce costs.

One recent area of concern was its energy costs, and the need to improve its operating efficiencies and upgrade older, inefficient equipment.

The Solution

Since the inception of the School Energy Efficiency (SEE) Program in 2001, FUSD's Energy Management Department has played a leading role in pursuing energy efficiency opportunities and served as the program's pilot district. Managed by Resource Solutions Group, the 2006-08 SEE Program offers technical services and cash incentives to assist school districts in identifying, developing, and implementing cost-effective energy efficient building improvements. The SEE Program works in close partnership with Pacific Gas & Electric (PG&E), and is funded by PG&E ratepayers under the auspices of the California Public Utilities Commission.

The SEE Team analyzed a number of FUSD's facilities and identified potential projects the district could implement to help reduce its overall operating costs. At the request of the district, the SEE Team provided unbiased technical and financial analysis by evaluating the costs and benefits associated with implementing a district-wide portable classroom lighting project. With assistance and support from the SEE Team, FUSD was able to secure a qualified contractor for the project and implement the lighting upgrade, beginning in March of 2007.



A contractor installs the new lamps at FUSD

“ The teachers are ecstatic. They don’t call their portable classroom a cave anymore. ”

FRANK DI LIDDO
FUSD’s energy educator/manager

To learn more about the SEE Program, visit:
www.schoolenergyefficiency.com

The SEE Team thanks Fresno Unified School District and Sun Industries for their support and implementation of the project.

To learn more about Resource Solutions Group, visit:
www.rsgroup.com



NOTE: Electricity savings based on \$.159/kWh.
Carbon savings based on 1.09822 lbs CO₂/kWh saved. Number of cars removed based on 1 car/ 7.1875 tons CO₂ removed

The Project

Over several months, FUSD systematically replaced its outdated T-12 linear fluorescent fixtures throughout all of its portable classrooms with new, energy efficient T-8 linear fluorescent fixtures. In many cases, the total number of lamps per fixture was reduced, since the T-8 fixtures provide equal or greater light output at a fraction of the energy used.

Crews performed most of the work at night in order to avoid classroom disruptions. On average, the crews were able to complete a typical twelve-fixture classroom installation in less than one hour. In total, 12,106 T-8 fixtures were installed in 984 portable classrooms between March and July of 2007.

In addition to the initial technical and cost benefit analysis, the SEE Team provided FUSD with a bid specification outlining the requirements of the project, provided ongoing project implementation support and provided cash incentives upon project completion.

The Results & Benefits

FUSD’s successful completion of the T-8 lighting retrofit project provides:

- \$365,374 in estimated annual cost savings;
- \$316,611 in SEE Program incentives;
- 2,297,948 in estimated annual kilowatt-hour savings;
- 1.6 year estimated simple payback;
- 61% estimated return on investment.

In addition to the significant energy and cost savings, FUSD’s T-8 lighting retrofit project resulted in the following benefits:

Improved Learning Environment: By increasing the light levels in most of the classrooms by 50 – 60%, teachers are finding that students are more alert and attentive. “The teachers are ecstatic,” says Frank Di Liddo, FUSD’s energy educator/manager. “They don’t call their portable classroom a cave anymore.”

Reduced Maintenance Costs: The new, T-8 fixtures eliminated a variety of ongoing headaches associated with the old fixtures for the FUSD’s Maintenance Department and freed them up to perform other work. “The custodians are happy because the two-lamp fixture is easier to remove and replace,” reports Di Liddo. “Plus, their physical inventory has been cut in half.”

Carbon Emission Reductions: The project reduced FUSD’s carbon dioxide emissions by a total of 1,705,390 pounds per year. This translates into 118 cars taken off the roads of California each year.

Reduced Electric Load: The project resulted in a demand reduction of approximately 1,277 kilowatts, providing additional capacity for both FUSD and the utility during peak periods.

The Response

“I hate to sound like a cliché,” remarks Di Liddo, “but the project was truly a success—a win-win for all.”