

Schools: An Overview of Energy Use and Energy Efficiency Opportunities



Energy Use in Schools

The nation's 17,450 K-12 school districts spend more than \$6 billion annually on energy — more than is spent on computers and textbooks combined. As much as 30 percent of a district's total energy is used inefficiently or unnecessarily.

By being more energy efficient, schools can help prevent greenhouse gas emissions and improve the students' learning environment. School districts can and have used the savings from improved energy performance to help pay for building improvements and other upgrades that enhance the learning environment.

Energy Efficiency Opportunities

Schools can save energy in a variety of ways.

Low-Cost Measures

- > Measure and track energy performance.
- > Turn off lights when not in use or when natural daylight can be used.
- > Set back the thermostat in the evening and other times when a building is unoccupied.
- > Perform monthly maintenance of heating and cooling equipment to guarantee efficient operation throughout the year.
- > Educate students and staff about how their behaviors affect energy use. Some schools have created student energy patrols to monitor and inform others when energy is wasted.
- > Use ENERGY STAR Target Finder to integrate efficiency goals into the design of new properties.

Cost-Effective Investments

- > Install energy-efficient lighting systems and controls that improve light quality and reduce heat gain.
- > Upgrade and maintain heating and cooling equipment. Replace chlorofluorocarbon chillers, retrofit or install energy-efficient models to meet a building's reduced cooling loads, and upgrade boilers and other central plant systems to energy-efficient standards.
- > Use a performance contract to guarantee energy savings from upgrades.
- > Work with an energy services provider to help manage and improve energy performance.
- > Purchase energy-efficient products like ENERGY STAR qualified office equipment.
- > Install window films and add insulation or reflective roof coating to reduce energy consumption.

How to Talk to Schools About Energy Efficiency

When talking to schools about energy efficiency, it is important to recognize that they have more pressing needs, like the health of the students, test scores, and a significant lack of resources. In fact, speaking of "healthy, high performance schools" is a good way to package energy efficiency messaging. Showing how energy improvements can help free up resources by spending less on utility bills provides schools with a greater incentive to become more energy efficient.

School Districts Making a Difference:

Davenport Community School District, IA, has been an ENERGY STAR partner since 1998. The district's energy program is guided by ENERGY STAR's Guidelines for Energy Management. Davenport has been able to reduce costs per student to \$88.46 per school year, compared to the national average of \$181.53. They have saved more than \$1 million over 3 years.

Seaford School District, DE, implemented an energy management plan that has reduced its energy use by 16 percent annually, saving nearly 82 million kBtus of energy. The district has cleaned boilers in all school buildings, upgraded lighting systems to high-efficiency T8 and T5 lights, and installed high efficiency dehumidification equipment to improve indoor air quality (IAQ) while reducing the energy load from central plant chillers.

San Diego Unified School District (SDUSD), CA, educates nearly 133,000 students in more than 200 schools, 72 percent of which have earned the ENERGY STAR. SDUSD is the eighth largest urban school district in the country and the second largest district in California. With a portfolio-wide rating of 84, the district has saved close to \$12 million per year and more than \$90 million over the past 12 years.

ENERGY STAR® is a government-backed program helping businesses and individuals protect the environment through superior energy efficiency.



LEARN MORE AT
energystar.gov

Schools: An Overview of Energy Use and Energy Efficiency Opportunities



How to Talk to Schools about Energy Efficiency (cont.)

For schools doing structural enhancements to improve indoor air quality (IAQ), a key concern linked to student performance, you should stress that making the structure more energy efficient simultaneously will help pay for those investments through cost savings over time.

Studies have found that a better physical environment that includes superior energy performance contributes to increased learning and productivity. This, in turn, affects performance and achievement. By establishing the facilities management practices necessary to improve energy performance and by properly monitoring and maintaining systems as part of an energy management program, schools are better prepared to improve IAQ.

Working with schools at the district level, rather than the individual school level, is often a more effective path to follow. Also, you should mention how improving the energy efficiency of the school can serve as a key learning tool for students in terms of science, math, the environment, and social and fiscal responsibility.

ENERGY STAR Offers:

- Guides and manuals
- Facility benchmarking
- Training
- Institutional purchasing
- Technical support
- Financing resources
- Emissions reporting
- Third-party recognition
- Motivational campaigns

ENERGY STAR Resources

Guidelines for Energy Management: Based on the successful practices of ENERGY STAR partners, these guidelines can assist school districts in improving their energy and financial performance while becoming environmental leaders themselves.

Portfolio Manager — Measure and Track Energy Performance: By measuring energy use, setting goals, and tracking energy changes, schools can gain control of energy expenses. Schools can rate their energy performance on a scale of 1 to 100 relative to similar buildings nationwide. To date, EPA's energy performance rating system has been used to measure and track the energy use of more than 11,000 schools.

www.energystar.gov/benchmark

Perform Cost-Effective Building Upgrades: Plan systematic building upgrades using the 5-stage approach in EPA's Building Upgrade Manual. This online handbook offers guidance for each stage, from commissioning to plant upgrades.

www.energystar.gov/bldgmanual

Recognition for Achievements

Earn the ENERGY STAR: Schools earning a rating of 75 or higher using Portfolio Manager may qualify for the ENERGY STAR label.

www.energystar.gov/eslabel

Become a Leader: ENERGY STAR partners who demonstrate continuous improvement district-wide, not just in individual school buildings, may qualify for recognition as ENERGY STAR Leaders. EPA will recognize districts that have achieved reductions of 10 percent, 20 percent, 30 percent, or more. Recognition is also available for an average rating 75 or higher across a district's portfolio.

www.energystar.gov/leader

Other Resources for Schools:

The Council of Educational Facilities Planners International (www.cefpi.org): EPA and CEFPI share the goal of improving energy efficiency and IAQ in school facilities to ensure the health, safety, and performance of students and staff.

The Association of School Business Officials International (www.asbo-i.org): ASBO International provides programs and services to promote the highest standards of school business management, including energy efficiency.

The National Energy Education Development Project (www.need.org): The NEED Project promotes an energy-conscious society by creating effective networks that design and deliver objective, multi-sided energy education programs.

The Alliance to Save Energy (www.ase.org): The Alliance's Green Schools Program engages students in creating energy-saving activities in their schools.

Visit www.energystar.gov/schools for more information on ENERGY STAR resources and recognition.

ENERGY STAR® is a government-backed program helping businesses and individuals protect the environment through superior energy efficiency.



LEARN MORE AT
energystar.gov