

Kansas K-12 Public Schools – Getting top scores in energy efficiency

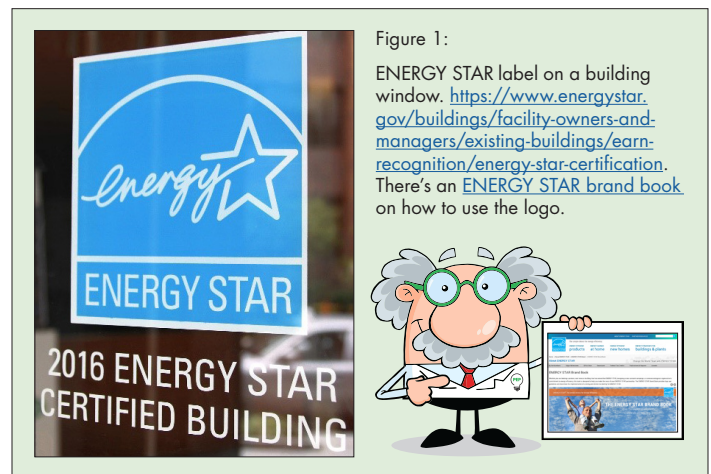
In the United States, K-12 schools spend billions every year on energy. It is the second largest budget item behind personnel.¹ However, schools throughout the United States are reducing energy use as much as 30 percent by successfully implementing energy efficiency practices and technologies.² Some exceptional schools have documented 20-37 percent reductions in electricity use entirely by adopting behavior-based strategies.³ Many energy efficiency initiatives can be implemented at low or no cost.⁴ Avoided energy costs can be redirected to upgrading buildings, hiring staff, and purchasing needed supplies.

In addition to cost saving benefits, energy-efficiency improvements can improve students' learning environments with better lighting, temperature, acoustics, and indoor air quality.⁵ It can improve student performance, teacher retention rates, reduce insurance costs, and reduce legal liability due to improved indoor environmental quality. Environmental benefits include reduction of greenhouse gas, sulfur dioxide, nitrogen oxide, and fine particulate matter emissions from generating facilities, thereby improving outdoor air quality.⁶

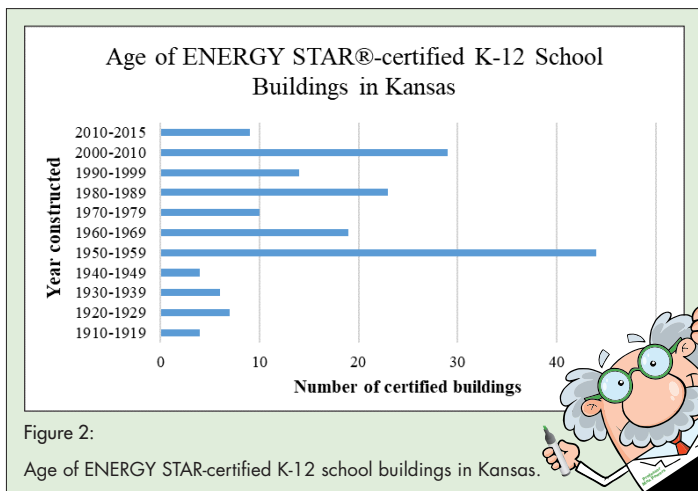
ENERGY STAR benchmarking for K-12 schools

ENERGY STAR has become a widely recognized symbol that consumers and businesses use when wanting to purchase energy-efficient products. In addition to certifying products, the ENERGY STAR program certifies commercial and institutional buildings as well as industrial plants. For a school to become ENERGY STAR-certified, it needs to provide information about its building or campus including at least one year's worth of energy usage data. The ENERGY STAR Portfolio Manager online tool will use the data and calculate a score everyone can understand, 1-100. The score is a benchmark as to how the energy performance of a K-12 school building or campus compares with its peers, taking into account climate, weather,

and activities at the school. The score can be a benchmark for a school to use when tracking future improvements it makes in energy efficiency and possibly other areas, including water conservation and waste reduction. Schools earning an ENERGY STAR score 75 or higher may qualify for the ENERGY STAR label as seen in **Figure 1**.



Most energy in schools is used by lighting, heating, and cooling.¹ Kansas has 286 unified school districts. Together, these districts include approximately 350 high school buildings, 200 junior high/middle school buildings, and 750 elementary school buildings.⁷ Only 165 of these public buildings, or approximately 12 percent, have received ENERGY STAR certifications (i.e., had an ENERGY STAR score of at least 75). The buildings are located in 18 of the 286 school districts.⁸ Even older buildings have the ability to become energy efficient. As shown in **Figure 2**, a vast range of building ages achieved this prestigious energy efficiency recognition. Kansas schools have the potential to make great strides in energy efficiency and collectively save millions of dollars in energy costs.



How to Initiate Energy Efficiency at your School

The Kansas Corporation Commission (KCC) Energy Division, in partnership with Kansas Energy Program (KEP) at Kansas State University, has a program to provide no-cost energy efficiency education to Kansas public school districts. Initiating energy efficiency practices at school provides a learning opportunity for students. Ideally, schools will take advantage of the opportunity to integrate energy efficiency lessons and practices with student group activities or in various classes. Participating students will learn about science, math, and the environment, along with social and fiscal responsibility. If you are interested in saving money by reducing energy usage, contact either the KCC or KEP.

Contact us!

- Kansas Corporation Commission
 ENERGY DIVISION
 1500 SW Arrowhead Road
 Topeka, Kansas 66604
 (785) 271-3352
<https://kcc.ks.gov/kansas-energy-office/fcjp>
- KANSAS ENERGY PROGRAM
 K-State Engineering Extension
 2323 Anderson Ave, Suite 300
 Manhattan, KS 66502
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KEP will conduct onsite training tailored to the needs of the interested public school districts. KEP will work with the district to implement the ENERGY STAR K-12 Energy Efficiency Student Toolkit⁹, which consists of the following activities:

Activity 1: Understanding Energy Efficiency

Student and administration participants will gain an understanding of why it is important to help improve energy efficiency in their school.

Activity 2: Getting Started with Benchmarking Your School in Portfolio Manager

Each school will create its own ENERGY STAR Portfolio Manager account and enter property use and energy use data. Energy use intensity (EUI), or energy use per square foot, will be calculated along with an ENERGY STAR score. This will give your school an idea of how it compares with other K-12 schools in the nation and the degree of potential for improvement.

Activity 3: Identifying Energy-Efficiency Opportunities at Your School

Student and administration participants will learn about the major uses of energy typically found in schools and solutions for reducing energy.

Activity 4: Conducting an Energy Efficiency Treasure Hunt (simple energy audit) at Your School

The toolkit provides a checklist to guide students and/or staff in looking for opportunities for improvement.

Activity 5: Start a Behavior Change Campaign to Improve Energy Efficiency at Your School

Just like at home, wasting energy can be prevented simply by changing behaviors and habits at school buildings. For example, turning off lights, computers, and copying machines when not in use can amount to significant cost savings.¹⁰

Activity 6: Calculating Savings and Financing Energy Efficiency

KEP will assist with using ENERGY STAR Portfolio Manager to set a performance target and see how much money your school could save with a given reduction in energy use. Calculations can be made to determine the simple payback period of energy-efficiency upgrades.



How to Pay for Upgrades – Consider FCIP

As a publicly-owned facility, public schools can participate in the Facility Conservation Improvement Program (FCIP) administered by the KCC Energy Division. The FCIP enables school districts to implement energy-efficiency projects funded by the guaranteed energy savings of those projects through performance contracting. The KCC pre-qualifies Energy Service Companies (ESCOs) that provide services through a state contract. This process frees administrators from having to issue requests for proposals (RFPs), develop specifications, write contracts, or hire outside consultants and engineers. More details are available at <https://kcc.ks.gov/kansas-energy-office/fcjp> and in a KCC fact sheet, *Facility Conservation Improvement Program: A tool for improving Kansas public buildings*.¹¹

Visit these organization's websites for more information on energy efficiency programs:



- EnergySmart Schools Program, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, <https://www.energy.gov/eere/office-energy-efficiency-renewable-energy>
- ENERGY STAR® Program, U.S. Environmental Protection Agency, <https://www.energystar.gov/>
- Center for Green Schools, U.S. Green Building Council, <https://www.centerforgreenschools.org/>
- Power Efficiency Project (PEP), Kansas Corporation Commission, Kansas Energy Office, <http://www.kcc.state.ks.us/kansas-energy-office>
- Kansas Energy Program - Teachers, <https://kansasenergyprogram.org/teachers>

References

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2. Energy Efficiency Programs in K-12 Schools. U.S.EPA. 2011. https://www.epa.gov/sites/production/files/2015-08/documents/k-12_guide.pdf.
3. Powering Down: A toolkit for behavior-based energy conservation in K-12 Schools. The Center for Green Schools, U.S. Green Building Council, Inc. 2013. p.5. <https://www.centerforgreenschools.org/sites/default/files/resource-files/Behavior-based-Efficiency.pdf>. p.2.
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11. Facility Conservation Improvement Program: A tool for improving Kansas public buildings. Kansas Corporation Commission Energy Division. January 2020. https://kcc.ks.gov/images/PDFs/kansas-energy-office/fcip/fcip_brochure.pdf.