A Guide to Energy Efficiency

for K-12 schools in Minnesota Power's service area

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EnergyForward

Getting Started

In 2024, Minnesota Power helped schools save **1,743,425 kWh**. That's enough energy to keep the lights on in a typical school for about **87 months, or more than seven years!**

We can help your school achieve significant energy savings, enhance the learning environment for students and teachers, and contribute to a more sustainable future.
This guide will help you understand the array of free programs available to schools at no cost. We think you'll find this guide valuable whether you're planning a renovation, upgrading equipment, or just looking to cut operating costs.

Our comprehensive suite of tools, training and financial incentives includes energy analysis, which helps identify areas where your school can improve efficiency, and rebates for upgrading to energy-efficient equipment that lower initial costs.

By participating in these types of efforts, schools can create a healthy and more comfortable learning environment while also contributing to broader environmental goals and lowering their energy consumption and utility bills. That, in turn, can free up funds for other critical educational needs. Embracing energy efficiency is not just a smart cost-saving measure; it's an investment in the future of our students and planet.

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Why Choose Energy-Efficiency?

Energy Efficiency: How Cost-Saving Strategies Benefit Schools

Energy efficiency is becoming a top priority for school administrators and facility managers—and for good reason. K-12 school districts spend over $8 billion nationwide on energy costs each year. More than 30% of energy use goes to waste and 10% can be saved by implementing low-cost measures. The Environmental Protection Agency's ENERGY STAR® program can help you learn how to assess your building's energy efficiency, find financing, save energy, and earn recognition.

Learn more at:
energystar.gov/buildings/resources-audience/k-12-schools.

Even without major investments, schools that focus on energy-smart operations and maintenance can save energy and money. Energy-efficient improvements can also enhance the comfort, safety, and learning environment for students, while helping schools tackle a range of operational challenges.

Energy efficiency can support schools by:

- Lowering utility costs
- Improving indoor air quality and lighting
- Enhancing student and staff comfort
- Reducing maintenance needs and supporting sustainability goals

Low-Cost, No-Cost Improvements

For schools operating under tight budgets, finding low- or no-cost ways to reduce energy consumption is crucial. While simply turning off devices might seem trivial, it can lead to substantial savings when done consistently. Here are some low-cost/no-cost ideas to implement at your school.

MyAccount

Track your energy use monthly, daily or hourly t o learn how and when you are using energy though the MyAccount dashboard. Set usage alerts and track account and meter information. **https://myaccount.mnpower.com/**

System Automation

Automating the process of turning off lights and adjusting HVAC settings can be highly effective. Installing occupancy sensors and networked lighting controls ensures that lights are turned off in unoccupied rooms. Similarly, HVAC systems can be programmed to reduce temperatures during non-operational hours and maintain minimal settings in areas like auditoriums, gymnasiums, and cafeterias when they are not in use. Even if some equipment cannot be completely turned off, lowering it to minimum levels can save energy.

Lighting

If your building uses inefficient lighting, such as incandescent, halogen, HID, or T12 fluorescent, you're missing out on significant savings. Updating your lighting can be a great first step when it comes to making your building an efficient one.

Computers and Equipment

Smart power strips with built-in occupancy sensors can automatically shut off devices when they are not in use. For more significant savings, schools might consider investing in a virtual desktop infrastructure (VDI), which centralizes desktop operating systems and enhances overall efficiency.

Efficient Water Use

Installing sink and shower controllers that automatically shut off after a set period, along with low-flow faucets and showerheads, can help conserve the energy used to heat water.

Heat pump water heaters are two to three times more energy efficient than conventional electric water heaters and can reduce electric water heating costs by more than 50%. Although they are more expensive to purchase, they provide significant savings over time.

Energy Assessments

Comprehensive Building Assessments Identify Energy-Saving Opportunities.

A whole-building energy analysis helps schools pinpoint exactly where energy is being consumed and where it is being wasted. This analysis involves examining all aspects of the building's energy use, including heating, cooling, lighting, and equipment operation. By identifying inefficiencies, schools can implement targeted improvements that reduce energy consumption and lower utility costs.

Additionally, a whole-building energy analysis provides valuable insights into how different systems interact and affect overall energy use. For example, it can reveal how outdated HVAC systems or poorly insulated windows contribute to higher energy bills. Armed with this information, schools can prioritize upgrades that offer the greatest return on investment, such as installing energy-efficient lighting or upgrading insulation. Ultimately, this approach not only enhances the school's sustainability but also creates a more comfortable and conducive learning environment for students and staff.

Energy assessments can uncover:

- Inefficient lighting or HVAC systems
- Poor insulation or air leaks
- Opportunities for behavior-based savings

Why it matters: Even low- or no-cost changes can reduce school energy bills, with greater savings possible through strategic upgrades.

Take action: Schedule an energy analysis with one of Minnesota Power's certified energy professionals. Call us at 218-355-2843.

Benchmarking

Track Progress and Set Goals

Benchmarking tools like ENERGY STAR® Portfolio Manager allow schools to systematically track and analyze their energy consumption. This powerful tool helps schools compare their energy performance against similar buildings nationwide, identify areas where energy use can be optimized, and highlight inefficiencies and opportunities for improvement.

Using ENERGY STAR® Portfolio Manager, schools can set realistic energy-saving goals and monitor progress over time. Additionally, schools that demonstrate significant energy savings can earn ENERGY STAR® certification, showcasing their commitment to sustainability and energy efficiency. This recognition not only enhances the school's reputation but also serves as a model for other institutions striving to reduce their environmental footprint.

Why it matters: What gets measured gets managed. Benchmarking helps schools find opportunities for saving and track progress.

Take action: Visit mnpower.com/SchoolHub to find instructions and information about Benchmarking your building.

Rebates

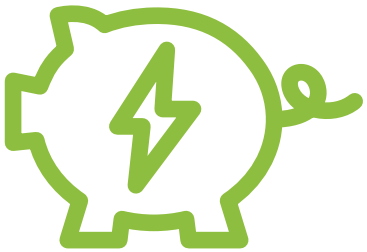
Making Energy Upgrades More Affordable

Minnesota Power offers a variety of rebate programs to help schools reduce the upfront costs associated with energy-efficient upgrades. These programs provide financial incentives for a range of improvements, including the installation of energy-efficient lighting, HVAC systems, and other equipment. By participating in these rebate programs, schools can significantly lower their initial investment in energy-saving technologies, making it more feasible to implement comprehensive energy efficiency projects.

In addition to financial rebates, Minnesota Power offers technical support and guidance throughout the upgrade process. This includes assistance with selecting the most effective energy-efficient solutions, ensuring proper installation, and verifying that the upgrades achieve the expected energy savings. By leveraging these resources, schools can reduce their energy consumption, lower their utility bills, and create a more sustainable and comfortable learning environment for students and staff.

These rebates can apply to:

- **LED lighting** retrofits
- **HVAC system upgrades**, including cold climate air source heat pumps, and ECM circulator pumps
- **High-efficiency boilers and chillers**
- **Smart thermostats** and controls
- **Kitchen equipment**
- And more!



Why it matters: Rebates lower the financial barrier to implementing energy-saving technologies, allowing schools to reinvest savings into educational resources.

Take action: Contact Minnesota Power or visit our website to explore current rebate offerings and eligibility requirements.
www.mnpower.com/Business

HVAC Maintenance

Properly cleaning and maintaining your HVAC systems can reduce the need for repairs and enhance energy efficiency.

Checklist

- **Service Economizers:** Air conditioning systems often use a damper vent or economizer to draw in cool outside air, reducing the need for mechanical cooling. Regular checks are essential as the damper linkage can seize or break. If stuck open, it can increase energy costs by letting in hot air during cooling seasons and cold air during heating seasons. Have a licensed technician inspect, clean, and lubricate the economizer annually and repair it if needed.

- **Check Air Conditioning Temperatures:** Use a thermometer to measure the temperature of the return air going to your air conditioner and the air coming out of the nearest register. If the temperature difference is less than 14 degrees or more than 22 degrees, have a licensed technician inspect your system.

- **Change Filters:** Replace filters monthly, or more frequently if your location is near a highway or construction site where the air is dirtier.

- **Check Cabinet Panels:** Quarterly, ensure the panels on your rooftop air conditioning unit are fully attached with all screws in place and that gaskets are intact to prevent air leaks. Leaking chilled air can waste energy.

- **Clean Condenser Coils:** Inspect condenser coils quarterly for debris. Thoroughly wash the coils at the beginning and end of each cooling season.

- **Check for Airflow:** Hold your hand up to air registers to ensure adequate airflow. If airflow is weak or dirt and dust are present at the register, have a technician inspect your unit and ductwork.

- **Add Pipe Insulation:** Insulate surfaces over 120°F, including boiler surfaces, steam and condensate return piping, and fittings, to reduce energy loss and ensure proper steam pressure.

- **Schedule Regular HVAC Tune-Ups:** Regular tune-ups are one of the most effective ways to maintain HVAC efficiency. They help to identify issues early and are critical to ensure optimal performance and air quality.

Building Your Skills

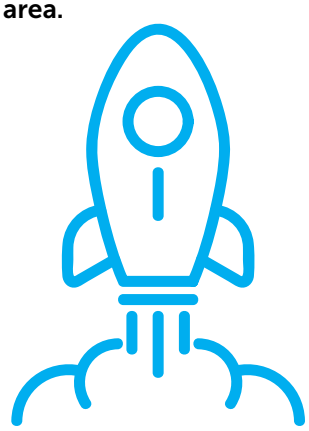
Minnesota Power offers a variety of ways for school staff to learn about sustainability practices and how to enhance energy efficiency at their buildings.

Building Operator Certification (BOC) Training

BOC training equips school facility managers with the skills to operate buildings more efficiently. Topics include:

- HVAC optimization
- Preventive maintenance
- Energy benchmarking and tracking

Building Operator Certification® (BOC) is a leading training and certification program for building engineers and maintenance personnel to increase their understanding of energy efficiency and smart building technologies. With the expertise and resources that attendees gain during this program, they will be equipped to provide energy and resource savings to building owners and organizations. **Minnesota Power may be able to reimburse costs for individuals and organizations in our service area.** Contact your area representative to learn more. **www.mnpower.com/Business/MeetTheTeam**



Find out more about BOC and upcoming trainings by contacting us at customerprograms@mnpower.com or visit **mnpower.com/business/ToolsAndResources** for more information.

Certified Energy Manager® (CEM®)

Learn how to optimize energy performance in your school by earning a CEM certification through the Association of Energy Engineers (AEE). The CEM is a systems integrator for electrical, mechanical, process, and building infrastructure, analyzing solutions to cost-effectively reduce energy consumption. CEMs are often team leaders and help to develop and implement their organizations' energy management strategies. This industry certification recognizes individuals who fundamentally understand the profession and technology solutions and are committed to the highest standards of quality.

Find out more about CEM at **www.AEEcenter.org/certified-energy-manager/**
Contact Minnesota Power to learn how we can help reimburse costs for CEM certification customerprograms@mnpower.com**.**

Food Service Training

Find opportunities to educate and certify commercial food service professionals about the fundamentals of energy and water efficiency. Read more at **www.mnpower.com/ProgramsRebates/ToolsAndResources** or contact your Minnesota Power representative with any questions. Find your representative here: **www.mnpower.com/ProgramsRebates/Business/MeetTheTeam**

Student Education

For decades, Minnesota Power has partnered with National Theatre Company to provide educational safety theater to schools in our service area. By integrating education about energy efficiency into the K-12 school curriculum, we can ensure that the next generation is equipped to handle environmental and economic challenges.

And more!

Find information about energy efficiency opportunities, rebates, solar, school education, and more at **www.mnpower.com/SchoolHub**

Investing in the Future

By implementing the strategies and using the resources here, schools can significantly reduce their energy consumption and operational costs. These savings can be redirected toward enhancing educational programs, improving facilities, and supporting student success.

In addition, fostering a culture of energy awareness and sustainability within the school community prepares students to be responsible, environmentally conscious citizens. The knowledge and skills they gain will empower them to make informed decisions and advocate for sustainable practices throughout their lives.

By taking proactive steps toward energy efficiency, schools can create healthier, more comfortable learning environments while contributing to a more sustainable and resilient future for everyone. Together, we can make a meaningful impact and inspire the next generation to lead the way in energy conservation and environmental stewardship.

Our team of energy experts is ready. Let's get started.

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