

Guide for Oregon Schools

A resource for school administrators from Oregon Department of Energy, Energy Trust of Oregon, Solar 4R Schools and public utilities.

Cut energy costs and save money for the classroom

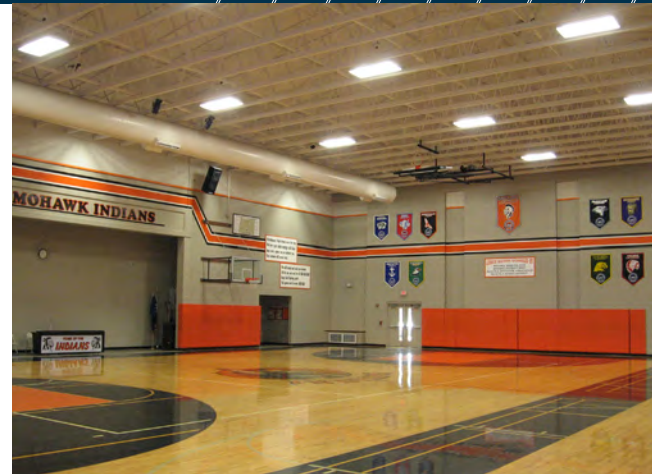
Schools face a mounting financial squeeze: how to keep cuts out of the classroom in the midst of shrinking budgets, fixed personnel costs, outdated facilities and volatile energy prices. Increasingly, K-12 school administrators have found that energy-efficiency improvements in new and existing buildings hedge against increasing energy costs and keep more money in the budget for education.

Energy is an expense that a school can reduce without sacrificing educational quality. Schools spend more on energy than any other expense except personnel. U.S. Department of Energy studies show that schools can reduce energy expenses by up to 20 percent just by effectively managing and operating their physical plants, regardless of school age. Some Oregon school districts have taken cost-effective steps to reduce district-wide energy use by nearly 50 percent.

Energy-efficient buildings can provide a learning environment with greater comfort and superior lighting quality. Such an environment has been shown to both boost student performance while enhancing teacher satisfaction. Energy improvements can also breathe new life into your physical plant, reducing maintenance and extending equipment life.

Energy efficiency and renewable resources create schools that are fiscally sound and environmentally responsible. These investments also send the right message to your community—that your district is doing everything it can to use taxpayer dollars wisely, creating opportunities to teach students about the broad benefits of sustainable energy practices.

Oregon Department of Energy (ODOE), Energy Trust, public utilities served by Bonneville Power Administration and Bonneville Environmental Foundation stand ready to help schools reduce energy consumption, generate clean energy and improve the local environment. We offer innovative solutions and cash incentives that can help you offset energy cost increases. We've done most of the homework for you and can help your school district achieve results.



Mohawk High School in Marcola is saving more than \$1,200 per year in electricity costs thanks to new high-performance fluorescent lighting in its gymnasium. The new system significantly improves the lighting quality and safety compared to the gym's previous metal halide lamps. Rebates from Emerald People's Utility District helped pay for new lighting in all school gymnasiums located in Marcola, Fern Ridge and Pleasant Hill School Districts, making it easier for those districts to comply with Senate Bill 479, which requires Oregon schools to replace R-type metal halide and mercury vapor light bulbs.

Why invest in energy efficiency and renewable resources like solar?

- Reduce operating costs and extend equipment life
- Earn valuable cash incentives
- Create healthier, more comfortable learning and work environments
- Improve light and air quality
- Achieve environmental certifications, such as ENERGY STAR® and LEED®
- Generate clean, renewable energy
- Integrate renewable energy and efficiency into curricula
- Help contribute to a more sustainable future
- Comply with health and safety standards, such as SB 479

Help is available for Oregon school districts statewide

- Lighting, daylighting, high-efficiency exit signs and lighting controls
- HVAC improvements, including central plant upgrades
- Variable frequency drives and variable speed motors
- Energy management systems
- Replacing metal halide or mercury vapor fixtures
- Building envelope upgrades
- High-efficiency kitchen equipment
- New, high-performance schools
- Solar and wind installations

Oregon Department of Energy

503.378.4040 or 1.800.221.8035

oregon.gov/energy/cons/sb1149/Schools/index.shtml

Senate Bill 1149 Funds. This program pays for 100 percent of eligible energy-efficiency projects. The Oregon Department of Energy administers this program. Every year, qualified schools are allotted funding for almost any type of energy-efficiency improvement in existing instructional buildings. These funds can also pay for energy audits to identify energy-efficiency projects. The funding amount is based on student enrollment. To qualify, schools must be customers of Portland General Electric or Pacific Power. The program is fuel-type neutral, so savings can come from electricity, natural gas, fuel oil or propane focused projects. Lastly, these funds can be used to help replace metal halide or mercury vapor fixtures with high-efficiency linear fluorescent fixtures, as required by SB 479. Whenever your school is considering an energy-efficiency project, your first step is to contact ODOE.

Business Energy Tax Credit. Most energy efficiency and renewable energy projects at Oregon schools qualify for the Business Energy Tax Credit. The BETC covers a fixed portion of a project's cost, depending on the technology. While schools do not have a tax liability, the BETC program has a pass-through option—Oregon's schools can receive a cash payment for their project by transferring their tax credit to an eligible third party. Contact ODOE to find out more.

Small Energy Loan Program. Twice annually, ODOE issues general obligation bonds for qualifying energy-efficiency projects. Schools can use these funds to finance energy projects in conjunction with incentives and tax credits.

More importantly, loans can be structured around the anticipated SB 1149 payments **and/or** estimated energy savings.

Oregon High-Performance Schools Program. ODOE staff can provide technical assistance and up to \$50,000 toward the added expense of building a new, high-performance public school. The program facilitates an integrated design process so that the resulting school is 30 percent more energy efficient than current Oregon energy code.



Energy-efficiency improvements in the seven schools in Pendleton School District are saving an estimated 35 percent annually. Projects, which included replacing several boilers, lighting upgrades and installing direct digital control systems, were made possible with help from SB 1149 funds through ODOE and a Business Energy Tax Credit pass-through.

Energy Trust of Oregon

1.866.368.7878
energytrust.org

Energy Trust services and cash incentives are available for buildings located in the service territories of Portland General Electric, Pacific Power, NW Natural and Cascade Natural Gas.

Comprehensive energy assessments. Energy Trust pays for comprehensive energy assessments for private schools as well as non-instructional buildings in public school districts. Energy assessments identify energy-efficiency opportunities and analyze their energy impact and cost-effectiveness. They help you identify which upgrades offer the highest return on your investment.

Cash incentives for energy-efficiency improvements.

Energy Trust pays cash incentives for qualifying energy-efficiency projects in public and private schools and non-instructional buildings. The maximum incentive per site is \$500,000 per year. Projects must meet energy savings and other specifications. Most projects must be pre-approved.



Cash incentives for renewable energy projects.

Energy Trust pays cash incentives for renewable energy projects, such as solar and wind, in existing and new public and private schools and non-instructional buildings. Incentives are based on the size and capacity of the systems and the utility serving the site. Energy Trust can help you comply with HB 2620, which requires public entities to spend 1.5 percent of the cost of a new or significantly renovated public building on solar energy.

Cash incentives for high-performance buildings. If you're planning a new school or non-instructional building, or a major renovation, Energy Trust offers cash incentives for energy efficiency, as well as up to \$2,500 for early design assistance, up to \$25,000 for technical assistance and up to \$40,000 for commissioning.

Beaverton School District turned to Energy Trust to help pay for energy-efficiency improvements in its administrative data center. The school district has been using SB 1149 funds through ODOE to improve efficiency in schools. In 2009 alone, the school district's energy savings resulted in nearly \$500,000 in budget savings.

Public Utility or Municipal Districts and Electric Co-ops

Contact your local PUD

Most public utilities that buy power from Bonneville Power Administration offer energy audits as well as incentives for electrical energy-efficiency improvements and renewable energy projects. Schools may qualify for cash rebates of up to 70 percent of the cost for cost-effective lighting, kitchen equipment and network PC power controls. Public utilities also may offer

custom incentives for HVAC equipment, building shell improvements and renewable energy projects. Bonneville public utilities also support energy-efficient new construction through the Energy Smart Design® incentive program. Ask your local electric public utility for details about program offerings.

Tap into clean, renewable energy

Renewable energy is an excellent companion to energy efficiency. A small wind installation or a solar electric, solar water heating or solar pool heating system can help you further lower energy costs. Renewable energy also provides an excellent tool for hands-on instruction in math and science.

Solar 4R Schools

503.248.1905

Solar4RSchools.org

Developed by Bonneville Environmental Foundation, Solar 4R Schools educates students, teachers and community members about the science and benefits of renewable energy technology. The program provides hands-on activity guides, science kits and demonstration solar electric systems at no cost to schools, by working with local funding partners who want to show their commitment to renewable energy education.

To receive a solar electric system, schools agree to own and maintain the system after installation. In turn, the school receives an exciting learning tool and all of the clean, renewable electricity it produces. The program includes lesson plans correlated to state

standards, online project data monitoring and data analysis, teacher training and ongoing support, teacher newsletters and online activity supplements, student workshops, such as “build your own solar panel,” as well as public relations and community outreach support.

Applications are accepted on an on-going basis and reviewed quarterly. Grants are awarded competitively when funding becomes available in a geographic area. If no funding is available at the time of review, but the applicant is eligible to receive a project, Solar 4R Schools retains the application until funding becomes available.



Hood River Valley High School installed a 1.8-kilowatt wind system with help from Energy Trust. Students monitor its performance and collect and analyze data as part of their curriculum.



Students at Molalla High School are proud of their 1.1-kilowatt solar electric system, made possible by Solar 4R Schools, Energy Trust and Portland General Electric. The system has been integrated into school curriculum, and students can monitor hourly electricity output.



Students at Sunnyside Environmental School in Portland learn about energy conservation and renewable energy while using the interactive touch-screen kiosk that monitors output from the school's 1.1-kilowatt solar electric system. Sunnyside installed the solar system with funding from Solar 4R Schools, Energy Trust and Portland General Electric.

Where to get help for K-12 energy-efficiency and renewable energy projects*

To see what funding sources are available for your school, locate your utility across the top row of the grid and the type of building you are upgrading or building down the left column.

Type of Building	Utilities Serving K-12 Building		
	Pacific Power, Portland General Electric, NW Natural, Cascade Natural Gas	Public Utility, Municipal District, Electric Co-op, NW Natural, Cascade Natural Gas	All utilities
Existing public K-12 instructional buildings	SB 1149 (ODOE), FIRST Energy Trust, AFTER all SB 1149 funds are committed	Local PUD for electric projects Energy Trust for gas projects	Business Energy Tax Credit and Energy Loan Program (ODOE)
Existing public K-12 non-instructional buildings	Energy Trust	Local PUD for electric projects Energy Trust for gas projects	Business Energy Tax Credit and Energy Loan Program (ODOE)
Private schools, existing and new, instructional and non-instructional buildings	Energy Trust	Local PUD for electric projects Energy Trust for gas projects	Business Energy Tax Credit and Energy Loan Program (ODOE)
New public K-12 instructional buildings	Energy Trust Oregon High-Performance School Program (ODOE)	Local PUD for electric projects Energy Trust for gas projects Oregon High-Performance School Program (ODOE)	Business Energy Tax Credit and Energy Loan Program (ODOE)
New public K-12 non-instructional buildings	Energy Trust	Local PUD for electric projects Energy Trust for gas projects	Business Energy Tax Credit and Energy Loan Program (ODOE)
Renewable energy projects, instructional and non-instructional buildings	Energy Trust Solar 4R Schools	Local PUD Solar 4R Schools	Business Energy Tax Credit and Energy Loan Program (ODOE)

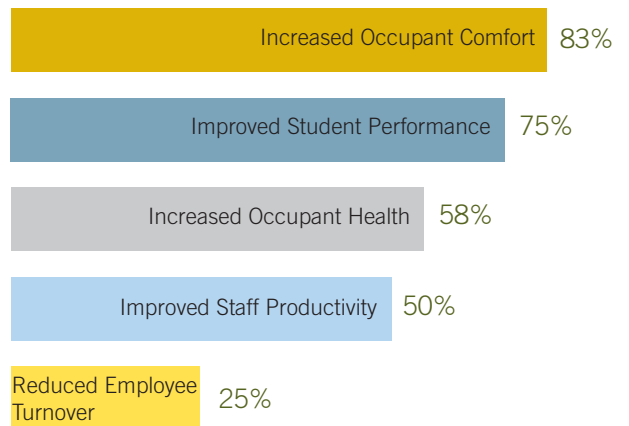
**Your project could be eligible for services and incentives from multiple entities. Remember to investigate all potential resources. For energy-efficiency improvements in existing public school instructional buildings served by Pacific Power or Portland General Electric, first call Oregon Department of Energy, which administers public purpose funds (also known as "SB 1149 funds") that are allotted to public school districts. It is best to use those funds first, until your district has reached its allotment.*

Why design a high-performance building?

A high-performance building offers a more comfortable, healthy and productive learning and working environment that can improve student attendance and academic performance, increase staff productivity and boost retention of both teachers and administrators. A school constructed to green building standards also has lower operating costs and becomes a living laboratory for teaching students and the community about responsibility and sustainability.

Corvallis High School, completed in 2005, achieved a LEED Silver rating with the U.S. Green Building Council and serves as a model of energy and resource efficiency. The school district participated in Oregon's High-Performance Schools Program, and also received cash incentives and support from Energy Trust. The project qualified for an Oregon Business Energy Tax Credit pass-through option.

PERCENTAGE OF 12 HIGH-PERFORMANCE SCHOOLS THAT IDENTIFIED THE FOLLOWING INDOOR ENVIRONMENTAL QUALITY BENEFITS



Source: Rocky Mountain Institute (2007)

School districts can save 20 to 40 percent on annual utility costs for new schools and 20 to 30 percent for renovated schools by applying high-performance design concepts.
 – Environmental Protection Agency

Energy costs make up roughly 25 percent of facility operations and maintenance budgets for K–12 schools in the U.S. – American School and University

Take control of your energy costs. Contact us today.



Oregon Department of Energy
 1.800.221.8035
oregon.gov/energy/cons/sb1149/Schools



Public Utility Districts and Electric Co-op
 Contact your local PUD or Co-op



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