

## Community Colleges Earn High Marks for Energy-Saving Solutions

Oregon's publicly-funded community colleges are taking advantage of Energy Trust of Oregon services and incentives to invest in energy-saving improvements that help control operating costs and modernize facilities.

Community colleges are energy-intensive, with multiple buildings and satellite campuses that operate long hours to accommodate thousands of full and part-time students. Limited capital improvement resources mean facilities managers have had to make do with aging lighting and building systems, adding to their maintenance and repair costs.

Thanks to several successful local bond measures and innovative funding strategies, many community colleges in Oregon have been able to upgrade current facilities, integrate the latest energy-efficient technologies and build new high-performance buildings.

Energy Trust can help community colleges reduce energy expenses and achieve sustainability goals. Our highly skilled energy experts understand the specific needs of a facility, providing technical assistance and cost analyses that make it easier to make the best decision for your campus and community. Energy Trust offers cash incentives for capital equipment upgrades, operations and maintenance improvements, Strategic Energy Management and renewable energy installations.

#### TECHNICAL ASSISTANCE AND CASH INCENTIVES

- Upgrades to energy-efficient lighting, HVAC and other equipment
- Strategic Energy Management
- Solar electric systems
- New construction and major renovations
- Path to Net Zero new construction





## CLACKAMAS LEVERAGES BOND MEASURE FOR HIGH-PERFORMANCE BUILDINGS

With 27 buildings and 665,000 square feet spread across three campuses, energy costs are a major contributor to overhead at Clackamas Community College (CCC). A voter-approved \$90 million bond measure is helping CCC modernize campus buildings and make investments in new high-performance buildings to significantly reduce energy use.

The first of four bond-funded projects to be completed is the \$21.7 million Harmony West building, located at CCC's satellite campus in Milwaukie. Enrolled in Energy Trust's Path to Net Zero program, the building was designed to perform up to 43 percent better than a code equivalent building with the same use and functions.

Harmony West is a three-story, 43,534-square-foot modern facility equipped with flexible classrooms, labs, community event space and a bookstore. The new building is configured with classrooms on the north side to minimize solar impact while optimizing the contribution from natural daylight. A 38.4kW (120-panel) photovoltaic system located on the roof helps offset the building's grid-supplied energy use by up to 20 percent. The project incorporated a combination of displacement ventilation and radiant slab to improve fresh air delivery while also improving the overall efficiency of the building's heating and cooling systems. When fully functional, the building will be more efficient than a typical building of its type and is expected to save approximately 129,000 kWh of electricity per year and 1,400 therms of natural gas.

In addition to the new construction projects, the college has worked with Energy Trust since 2009 on retrofits and lighting upgrades that have earned more than \$92,000 in cash incentives, and saved CCC approximately \$100,000 in annual energy costs.

#### Our board looks for every opportunity to do more with less. Energy Trust brings opportunities for sustainable savings and helps to make them a reality.

Bob Cochran, dean of campus services, Clackamas Community College





Photo provided by Opsis Architecture

## PCC SETS LONG-TERM GOALS TO GUIDE ENERGY USE

More than a decade ago, Portland Community College (PCC) developed long-term goals and guiding principles to support climate protection and improve energy performance at its five campuses. Laura Ward, energy resource conservation manager, PCC, uses these principles to find ways to save energy throughout the system. Since 2005, PCC has saved more than 7.4 million kWh of electricity and 384,000 therms of natural gas with the help of Energy Trust audits, technical assistance and cash incentives for dozens of energy-saving improvements.

Ward starts with a holistic approach by looking at energy consumption across the district and identifying the biggest users. PCC's greatest energy challenges are found on the Sylvania and Rock Creek campuses, home to several aging buildings. "I look at these as energy opportunities," said Ward. "Improvements at these campuses address deferred maintenance and energy use, which make a significant impact toward long-term energy reductions."

She uses energy audits as a tool to prioritize and budget for projects. These audits helped her improve building controls systems and identify mechanical upgrades to chillers and boilers. Inefficient lighting systems have also been replaced with newer technologies, including LED. When the time comes for an upgrade, she focuses on investments that improve the efficiency of a whole system, rather than replace existing equipment with the same product.

Energy Trust's Strategic Energy Management initiative has been instrumental in changing staff attitudes and behavior. "I can't say enough good things about SEM," praised Ward. "Helping our technicians understand how energy works in buildings and how they affect it has been fabulous."

In addition to Ward's work, a \$374 million, voter-approved bond measure in 2008 paved the way for several campus improvements including construction of new energy-efficient buildings and a solar electric system. Recently, the college won the annual Second Nature Climate Leadership Award for two-year colleges, which recognizes innovative and advanced leadership in sustainability.

#### My job is to be prepared with a plan for our campus no matter what barriers exist, so we achieve our goal of saving energy.

Laura Ward, energy resource conservation manager, Portland Community College





## CENTRAL OREGON REAPS REWARDS FROM ENERGY-SAVING INVESTMENTS

Investments in energy-efficient lighting and heating and cooling systems are helping Central Oregon Community College (COCC) reduce energy waste and control costs.

With assistance from Energy Trust, COCC has completed 36 energy efficiency projects since 2006 that have saved nearly 2 million kWh of electricity and more than 135,000 therms of natural gas.

COCC launched a series of lighting projects across several buildings to improve the classroom learning environment. Four-foot LED tubes replaced older T12 lamps in the technology shops, where safety considerations for welding and metal fabrication call for high-performance lighting. Improved exterior lighting has given security staff better visibility at night and made students feel safer. Safety was also a priority on the Redmond campus, where over 100 lights were upgraded throughout four buildings, plus 90 lights in parking lots and driveways. Even the new parking lot at the COCC Chandler Lab forestry building was equipped with LEDs. HVAC controls were modernized in six buildings, and direct digital controls with demand control ventilation were installed to enable new computer equipment to operate properly. "HVAC controls make the buildings more comfortable for students and staff," said Sean Ladd, facilities maintenance supervisor, COCC, "and they help our team be more efficient and productive in their job. They can program systems remotely and diagnose issues and problems more quickly."

In addition to completing lighting and HVAC upgrades, COCC worked with Energy Trust to improve energy efficiency in its student housing facilities. Some of the upgrades included new showerheads, shower wands and a clothes washer to decrease energy costs, reduce water consumption and create a more sustainable environment. Not only does COCC understand the benefits of energy efficiency, it has made investments in clean energy as well. In 2016, the college added a solar electric system projected to generate over 700,000 kWh annually, helping



the college to avoid 340 tons of CO2 each year. Cash incentives of \$398,400 from Energy Trust have reduced COCC's overall project costs by more than 30 percent.

For now, the plan is to continue interior and exterior lighting improvements and digital control upgrades in more buildings. "Our facilities team is always looking for savings and pushing me to identify the next project," observed Ladd. "As we institute each of these measures and see the successes, it motivates us to move forward and make more changes."

When we consider a new energysaving project, our first call is to Energy Trust to learn more about our energy-efficiency options.

> Sean Ladd, facilities maintenance supervisor Central Oregon Community College







#### PATRIOT HALL IS ON THE PATH TO NET ZERO

Clatsop Community College (CCC) in Astoria is demonstrating a commitment to energy-efficiency with a new high-performance community space.

Patriot Hall, a former high school, was first built in 1921. Today, a historic plaque paying tribute to Clatsop County soldiers of all wars and two exterior walls are all that remains. The new facility is now a multipurpose gymnasium, educational, and community space so advanced, it's 70 percent more efficient than the national standard for buildings of this type.

Taking a redesigned Patriot Hall from initial vision to reality was made possible through a combination of votersupported bond funds and Energy Trust's Path to Net Zero program, which provides increased incentives for projects pursuing net-zero energy use. Energy Trust worked with CCC through every stage of the process, providing technical expertise and design assistance to maximize project efficiency while reducing upfront costs to the school.

This completely reimagined space honors the past while preserving the future, providing a sanctuary to gather and learn for over 2,000 students and the surrounding community. Innovative energy-saving features like daylighting, low-speed ceiling fans, solar water heating, high-efficiency insulation and outside air ventilation will save the school an expected \$25,000 per year.

Greg Dorcheus, facilities maintenance director, CCC, is happy with the results. "Being able to return this facility to this community and to this campus, knowing that it'll be here for many, many years to come, is rewarding."

It's so important for us to be good stewards of taxpayer dollars and just good stewards of the environment.

> Chris Breitmeyer, president, Clatsop Community College





Photo provided by Opsis Architecture

## COOS BAY SAVES ENERGY FROM THE GROUND UP

Southwestern Oregon Community College (SWOCC) launched plans to build modern, efficient health and science classrooms on its Coos Bay campus in the late 1990s. Financial barriers and an economic downturn stalled the project until 2013, when the Oregon legislature authorized \$8 million in matching funds for construction. "An \$8 million match is a tall order for a small, rural community college," said Jeff Whitey, vice president, administrative services, SWOCC. "Our community understood the need for the project, and in less than two years our college secured the entire match through grants, donations and fundraising."

SWOCC's 37,000 square foot Umpqua Health & Science Technology Building is now underway and enrolled in Energy Trust's Path to Net Zero program. The new building will include an extensive renovation of the campus' old Umpqua Hall, which had various uses as an auto shop, computer lab, campus security and storage. New science labs will replace antiquated labs, nearly unchanged from their design in the early 1960s. "This building will be a huge asset to our campus and residents of the south Oregon coast," continued Whitey. "We'll better serve our students and ultimately employers through enhanced curriculum and modern facilities, and we'll reduce operating costs at the same time." Approximately 10,000 students attend classes on SWOCC's three campuses in western Douglas County, and Curry and Coos counties. Since 2006, the college has saved 455,579 kWh of electricity and 2,300 therms of natural gas through energy-saving investments in 22 buildings. Cash incentives from Energy Trust have covered more than 40 percent of SWOCC's project costs.

Our work with Energy Trust improved our buildings and programs and helped us continue to save money and energy. We couldn't accomplish this without their help.

> Jeff Whitey, vice president, Administrative Services Southwestern Oregon Community College





# Energy Trust offers solutions that can help

- Reduce ongoing operating costs
- Generate clean, renewable energy
- Earn cash incentives
- Contribute to community sustainability goals and reduce your carbon footprint

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