



Energy students head out of the classroom to get on-the-job experience

*The Governor’s School Energy Audit Initiative was launched in January 2011 by Governor Kitzhaber in his first month on the job. The Initiative covers school buildings that are served by consumer-owned utilities and Idaho Power.**

Governor Kitzhaber directed the Oregon Department of Energy (ODOE) to lead the School Energy Audit Initiative and use Recovery Act (stimulus) funds to pay for the audits. Once audits are conducted, school districts can identify and prioritize energy efficiency projects. With a plan in hand, a school district can address financing options and see how energy savings could help repay a project loan.

ODOE assigned its Recovery Act staff to manage the audit initiative since stimulus funds paid for the audit initiative. The audits are being conducted between April and June 2011 by 11 audit firms that successfully responded to ODOE’s Request for Proposal. One firm, Marinello Engineering of Corvallis, has provided an opportunity for Lane Community College Energy Management students to get on-the-job energy auditing experience.

With a few months until graduation, Lane Community College (LCC) Energy Management student Neil Oliver was eager to get the required practical experience he needed to fulfill all his requirements for his Associate of Applied Science degree.

Fortunately for Oliver, the Governor’s School Energy Audit Initiative came along at the perfect time. Oliver and 20 of his classmates are conducting energy audits on many public schools in the Eugene area under the watchful eyes of LCC faculty such as Bruce Alford.

“It’s a good opportunity for the students to see what we have been teaching them in the classroom,” said Alford, a former energy specialist for a private-sector engineering firm and for the Oregon Department of Energy Schools program.

**School buildings served by PGE and Pacific Power have been receiving Public Purpose Charges since 2001 paid for by the utilities’ ratepayers. The Public Purpose funds have paid for energy audits and energy efficiency improvements.*

On May 17, Alford, three other LCC team leaders and 20 students audited Malabon Elementary School in the Bethel School District in Eugene. LCC instructors designed the audit of Malabon as a hands-on learning experience. Each leader took a student group and headed to areas inside and outside of the 50,900-square foot building.

Because the school was still in session, auditors ensured that they worked in rooms without children present. Alford carried a clipboard with classroom schedules so they could audit a room when students were in the library or out at recess.

“We have to be flexible,” Alford said. “But, it seems to work out pretty well.”

All of the LCC staff and students had to successfully pass Criminal Record Checks including fingerprinting and Oregon State Police background checks to enter the school as an auditor. They all wore black shirts with the Energy Management Program logo and had armbands with their names to clearly identify themselves on the school campus.

Many of the teachers at Malabon discussed the audits with their Malabon students to enhance their science

“...a significant student training opportunity.”
- Suzanne Marinello P.E.
Marinello Engineering



Mike Gillespie, LCC student auditor, left, checks out a light fixture in the library as student auditor Neil Oliver and LCC instructor Bruce Alford take photos. The group was auditing Malabon Elementary in the Bethel School District in Eugene.





Neil Oliver, LCC student auditor, checks to see the type of light used in the exit sign at Malabon Elementary in Eugene. The audit is part of the Governor's School Energy Audit Initiative paid for with Recovery Act funds.

classes and discuss how buildings use energy. Mrs. Kampfer's fourth grade class studied units of measurements during the audit so the class talked about how the LCC student auditors measured their classroom.

Gathering data

The student auditors enter the data gathered on to an energy audit template. It includes room measurements; light level readings; number, type and output of light fixtures; temperature in various areas of the room; equipment in the room (projectors, etc.); and general observations (gaps under the hall doors to the outside, etc.). Once all the data is collected from every room, nook and cranny of the school building, students and staff return to LCC computer lab and enter it into the ODOE School Energy Audit Initiative web application developed for the program.

Auditors could have entered the information directly into the web application using a hand-held device, either an I-pad or Droid device, however, Alford said LCC didn't have the hand-held devices and also wanted to ensure that faculty could review the data as it was entered.

The data collection will go through yet another level of review when Suzanne Marinello, P.E. and owner of Marinello Engineering of Corvallis and a full-time energy instructor at LCC, provides her input. Once she approves, the audit will be submitted to ODOE which has hired a quality control firm, SOLARC Architecture and Engineering, Inc., to review and analyze the findings.

Displaced workers

For Oliver, the auditing experience has been great. He looks forward to getting a job as an energy auditor or facilities manager when he graduates and the school audit experi-

ence is actual work experience he can put on his resume. Oliver had six-years of employment with now-bankrupt Monaco Coach Corporation of Coburg when he was laid off for the last time in 2009.

"The RV industry is dependent upon gas prices," Oliver said. "I knew I had to get into another line of work and I've always been interested in conservation and energy efficiency. This program was an opportunity I had to jump on."

As a displaced worker, Oliver qualified for accelerated training in LCC's Energy Management program.

"Many of the students are from the motor home industry and electronic industry," said Alford of the students in the accelerated training program. "The students range in age from 25 to 55, with most being in their mid-30s." The accelerated program for displaced workers is funded by Recovery Act (stimulus) dollars.

Mike Gillespie, Oliver's partner in the Malabon Elementary audit, was a laid off industrial painter when he learned of the LCC Energy Management Program.

Brian Ulrich, another student auditor, was a former forklift mechanic who worked while his wife was getting a graduate degree at University of Oregon. He is set to graduate from LCC in June and has a temporary seasonal job as sustainability coordinator with Portland Public Parks.

Dan Hoppe, has a Bachelor's degree in business, but saw an opportunity to get some specific job training with the LCC program.

Unique opportunity

The Governor's School Energy Audit Initiative provided a unique opportunity for the students to get on-the-job training. Suzanne Marinello, P.E., owner of Marinello Engineering and a full-time faculty member at LCC, saw that the initiative was made-to-order for student internships.

In her application to ODOE to provide some of the audits, Marinello wrote: "We envision this project as a significant student training opportunity that will produce energy management professionals for Oregon's workforce. An additional benefit for Oregon is that project interns will be more qualified for energy-related career opportunities included in Governor Kitzhaber's plan to revitalize Oregon's economy."

“The stimulus funds gave ODOE an opportunity to invest in activities that can be sustainable beyond the timeframe of the Recovery Act,” said Paul Egbert, ODOE Recovery Act manager. “Investing in the future energy workforce is one of the intended purposes of the Act. The result is an increased competence and expertise in the field.”

Audit process

ODOE divided the audit process into three broad stages:

- Preliminary data collection
- On-site data collection and quality control work
- Data analysis and report creation

ODOE staff contacted the 101 school districts involved in the Initiative to gather preliminary data on the number of buildings, square footage, the year built, remodel history, utility providers and three years of monthly utility usage.

The 11 audit firms were assigned school districts based on their regional preferences. Approximately 600 buildings were identified. ODOE developed a relatively prescriptive audit template that focused on shell, lighting and HVAC improvements.

“ODOE took this approach as we wanted a timely process without sacrificing audit quality and auditor safety while standardizing data collection and reporting,” said Jon Belmont, lead ARRA team project manager for the Initiative.

Once the audits are submitted they are reviewed and analyzed by SOLARC Architecture and Engineering, Inc., the quality control firm selected in a competitive solicitation process. SOLARC provides a report for school districts that advises them of the outcome of their audits, how their buildings compare with baseline buildings, potential energy efficiency projects, estimated costs and utility and other incentives and options for financing.



Teachers at Malabon Elementary in Eugene used the presence of energy auditors in the building as an opportunity to teach students about energy conservation.

ODOE and utility representatives will then meet with the school district representatives and review the report and answer questions that arise.

ODOE’s Small-Scale Energy Loan Program (SELP) has available special low-cost financing for eligible school projects to be completed in the summer of 2011 and again in early 2012.

Benefits for all

For school districts, implementing energy efficiency projects identified through the audits can result in reduced energy bills in the future.

For the audit firms selected, the Governor’s Initiative means steady work in a slow economy.

For Neil Oliver and his fellow students at LCC Energy Management Program, the Governor’s School Energy Audit Initiative has provided a special opportunity to get much needed on-the-job experience.

More information on Lane Community College Energy Management Program can be found at <http://www.lanec.edu/science/energyMgmt/index.html>

The Oregon Department of Energy (ODOE) awarded this energy project with American Recovery and Reinvestment Act (stimulus) funds through the State Energy Program. These funds are designated for energy efficiency and renewable energy projects. The U.S. Department of Energy administers the funds, approves the projects and reviews the state’s progress. The Oregon Department of Energy received \$42.1 million in SEP funding. All projects must be completed by February 15, 2012.

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