



INTEROFFICE MEMO

EUGENE WATER & ELECTRIC BOARD

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TO: Commissioners Farmer, Brown, Cassidy, Cunningham, and Ernst

FROM: John Femal, Community Education Coordinator

DATE: June 12, 2009

SUBJECT: Backgrounder on Education Grant for LCC Energy Management Program

Issue

EWEB has supported the Lane Community College (LCC) Energy Management Program with an annual \$120,000 Education Grant since 1999. The Memorandum of Understanding (MOU) with LCC that controls these grant funds expired at the end of June 2009. This memorandum provides background information on the Education Grant and the LCC Energy Management Program in anticipation of the upcoming consent calendar item to continue supporting the program.

Background

EWEB has been an active participant and supporter of the Lane Community College Energy Management Program for the last 29 years (since 1980). During this time, EWEB has partnered with LCC in a variety of ways, from providing EWEB staff to help with instruction, to utilizing LCC Energy Management interns to assist EWEB's Energy Management Services staff. BPA provided much of the Energy Management Program funding until 1995, when it ramped down funding and substituted matching grant funds to any local utility contributions the program could obtain. With the help of utilities like EWEB and direct funding from LCC, the program remained financially stable until March of 1997, when the LCC Board reluctantly voted to eliminate the program as part of \$1.3 million in budget reductions brought on by Measure 47. The LCC Board, however, left open the option of retaining the program if more outside funding could be found.

Due to the success of converting EWEB "in-lieu-of-tax" payments to local school districts to an Education Grant Program and the potential elimination of the LCC Energy Management Program, EWEB staff pursued the idea of changing LCC's "in-lieu-of-tax" payment into an EWEB Education Grant to directly support the Energy Management Program. In July of 1998, the EWEB Board passed resolutions to make the conversion, and EWEB has since supported the program with an annual \$120,000 education grant.

Benefit to EWEB and the Community:

With the LCC Education Grant, "in-lieu-of-tax" funds that would have gone into LCC's general fund now support an energy program that is directly connected with EWEB's mission and helps the community more efficiently manage our energy resources through trained graduates of the program.

The program has a vibrant internship program where students have the opportunity to work with local and regional organizations. Interns often work with local utilities, government organizations and a host of energy service providers. These interns provide a valuable resource to EWEB directly through assisting Energy Management Services and by helping manage energy use at local businesses and government facilities.

EWEB actively supports and utilizes the internship program as a way to provide energy management students an opportunity to apply classroom theory to real world situations. Interns gain valuable knowledge and field experience in commercial and residential energy management programs during internships at EWEB. Typically, two interns work part time for a one-year cycle, offsetting the need for about 0.5 FTE of staff. These interns conduct small research projects, gather data and perform energy-efficiency assessments for EWEB business and residential customers under the guidance of EWEB's energy management staff.

Program Support

Much of the financial support for the base Energy Management Program two-year degree program comes from the EWEB Education Grant. The grant provided \$120,000 annually from 1997 until 2006 when EWEB included a cost escalation factor increasing the grant on average of about 3% per year. The 2009 EWEB budget for this grant is \$132,403. The LCC Energy Program staff also successfully applied for a contract with the Northwest Energy Efficiency Alliance in 1998 to establish the Northwest Energy Education Institute (NEEI) whose mission is to provide cost effective, continuing energy education to regional practitioners. The intent was to provide a revenue stream that would support energy management program instruction. The Northwest Energy Education Institute has been successful in providing an additional revenue stream for the energy management program and has evolved into the umbrella program under which all LCC energy programs operate.

Program Summary 2008-2009 and Proposal 2009-2010

The Energy Management Program has a current enrollment of 65 students. About 45 are first-year students. Second-year students are split between the energy management program and renewable energy technician program. The program currently has a 90% placement rate for graduating students.

The renewable energy program has been acknowledged as the educational component to the State of Oregon renewable energy licenses titled the Limited Renewable Energy License (LRT) and the Solar Thermal License (STL). Other community colleges will use the renewable energy curriculum to develop their own continuing education offering around the state.

The Energy Management Program will have a complete complement of classes for the 2009-2010 school year offering three areas of concentration: Energy Efficiency, Renewable Energy, and Resource Conservation Management. All three concentrations will be fully enrolled based on the current rate of applications which is at 90 students. EWEB EMS staff will receive the annual LCC Energy Management Program proposals and can influence program direction through participation in the Energy Management Program Advisory Committee.

The 2008-09 program summary, 2009-2010 budget, and a program overview for the LCC Energy Management Program are attached. Roger Ebbage, LCC Energy Management Program Director would be happy to present additional information and answer questions on the LCC Energy Management Program for the Board at the Board's request.

Recommendation

EWEB staff recommends continuing support of the LCC Energy Management Program through an EWEB Education Grant that is implemented with a Memorandum of Understanding (MOU). The purchase order for the MOU will appear on the July 7 Board consent calendar, which provides a \$134,390 grant in the 2009-2010 school year and increases at 3% annually, resulting in a five year total of \$713,496.

SIGNATURES:

Project Coordinator: _____

Supervisor: _____

Purchasing Manager: _____

Division Director: _____

General Manager: _____

Board Approval Date: _____

Secretary/Assistant Secretary verification: _____

ENERGY MANAGEMENT PROGRAM

FY 2009

Projected FY 2010

& RENEWABLE PROGRAM

	2008-09		2009-2010	
Tuition	159,419		320,000	
General Class Fee	5,292		10,000	
Networking Capital from 2008	-135,502		-181,901	
Class Fee/Packet/Book Income	2,633		4,000	
Gifts & Donations	130,475		140,000	
TOTAL CASH RECEIPTS	162,317		292,099	
Total Cash Available (before cash out)	162,317		292,099	

CASH PAID OUT				
Advertising	913		1,000	
Books	878		1,200	
Office Supplies	189		300	
Postage	146		250	
Operating Supplies	2,513		3,000	
Instructional supplies	3,525		4,000	
Equipment under \$5000				
Computers			600	
Printing at LCC Print Shop	315		600	
Copier Charges at LCC	995		1,500	
Travel	757		1,000	
Maintenance / Repair				
Memberships/Dues	499		500	
Outside Services	5,519		5,000	
Bad Debt Charges	4,795		9,600	
Packets for Resale	2,494		5,000	
Freight				
Equipment over \$5000				
Projected to 6/30/09 M&S	500			
P/T Classified	12,682		15,000	
F/T Classified Salary	36,928		67,000	
P/T Faculty	86,632		130,000	
F/T Faculty	96,175		101,000	
OPE	87,763		135,440	3.2 & 5.3%

SUBTOTAL	0	344,218	0	0	481,990	0
TOTAL CASH PAID OUT	0	344,218	0	0	481,990	0
Cash Position	0	-181,901	0	0	-189,891	0

by GKY 6-15-09

Lane Community College Energy Management Program

Northwest Energy Education Institute

The Energy Management Program at Lane Community College began providing classes leading to the Associate of Applied Science Degree in 1980. The college closed the program in 1988 due to a lack of graduate employment opportunities as a result of US Administration energy policy. In 1992 the college reopened the program focusing on commercial energy efficiency. At that time the program received a three-year commitment of start-up funding from the Bonneville Power Administration (BPA). At the end of BPA support, the program received a combination of college general fund and industry funding. From the beginning the program has successfully offered courses, produced graduates, and has a ninety five percent student placement rate into family wage jobs. Students have found positions in private and public organizations under a wide variety of job titles.

In 1997 the college began to experience budget difficulties as a result of a property tax limitation measure passed by Oregon voters earlier in the decade. Consequently, the Energy Management Program was eliminated from the college's general fund and private funding was not enough to continue offering classes. Program Director Roger Ebbage asked and received permission from then Vice President (now President) Mary Spilde to operate the Energy Program if outside funding could be found.

Based on that agreement with VP Spilde, Ebbage began investigating industry funding opportunities. In 1998 he submitted a successful proposal to the Northwest Energy Efficiency Alliance (NEEA) to create the Northwest Energy Education Institute (NEEI) as a subset of the Energy Management Program. The intent of NEEI was / is to generate revenue to support Energy Management Program instruction until recurring funding could be found. NEEI has become the umbrella program under which all of the Lane energy programs, including the two-year degree program, operate. The NEEI mission is "To be the preferred source of cost-effective, innovative, high quality energy education that is designed to quickly respond to industry and societal trends".

Within the 3-year NEEA contract period (1998-2001), EWEB contacted the LCC administration asking that the annual in-lieu of property tax gift (\$220K + -) to Lane that was going to the college general fund be redirected to support the Energy Management Program. The college agreed to redirect funds and accepted a \$100K reduction of the gift which was converted into a grant. The grant was at the \$120K level until 2006 when a cost of living calculation was implemented.

In 2003 the Energy Management Program created and began offering a Renewable Energy option to the two-year Energy Management Degree. The Renewable Energy Option combines the first year energy program building systems classes with second year solar water heating and photovoltaic installation coursework. The intent was/is to provide an educated solar system designer and installers workforce for the very active solar industry. The NEEI manages the state Joint Apprenticeship Training Committee (JATC) which leads to solar trades licensing for program graduates.

Beginning fall term 2008 the Energy Management Program launched and new two-year degree titled Water Conservation Technician that will include residential, commercial/industrial, landscaping, and agriculture, sectors as well as water collection and use. The program is the first comprehensive water conservation technician two-year degree offered in the US. In 2009 the Energy Management program will offer a Resource Conservation Management Option that will have as its foundation the first year energy program building systems courses and a combination

of other program course work. The intent is to develop well rounded talent who can manage the consumable resource throughput for an organization.

Employment placement is the purpose for the program. The following is a table that shows the program's impact on the local economy and energy efficiency workforce. The table is a partial listing of local student placement:

Title	Organization	Location	Positions
Energy Analyst	Lane Electric Cooperative	Eugene	
Solar Installer	Advanced Solar	Eugene	2
Engineering Technician/Designer	The Carmichael Group	Eugene	
Energy Analyst	City of Eugene	Eugene	2
Energy Analyst	Solarc	Eugene	5
Energy Specialist	EPUD	Eugene	
Project Manager	Willamette ESD	Salem	
Energy Auditor / Sales Estimator	Marshall's Heating and Air Conditioning	Springfield	
Owner	Harvey Price	Eugene	
HVAC Tech	Premium Efficiency, Inc	Eugene	
Energy Accounting	University of Oregon - Facilities	Eugene	
Energy Analyst	SUB	Springfield	2
Designer	The Carmichael Group	Eugene	
Energy Educator	Lane County Housing Authority (HACSA)	Eugene	3
Energy Manager	Oregon Department of the Military	Salem	
Residential Analysis Design Specialist	EWEB	Eugene	4
Part Time RCS	Energy Management Department -City of Eugene	Eugene	
Field Technician	Ecotope	Portland	
Residential Analysis	Franklin Energy Wisconsin		
Program Manager	SUB	Springfield	
Electrical Engineer	SUB	Springfield	
Solar Electrician	Local electrical contractors	Eugene	6
Energy Programs Manager	Oregon Department of Energy	Salem	5
Energy Analyst	Lane Electric Cooperative	Eugene	
Energy Analyst	Lane Electric Cooperative	Eugene	
Sales	Comfort Flow	Eugene	
Energy Specialist	Systems West	Eugene	2
Solar Installer	RV Solar	Eugene	2
Energy Analyst	Lane Community College	Eugene	
Systems Consultant	Siemens	Coburg	2
Energy Analyst	The Carmichael Group	Eugene	
Project Specialist	Northwest Energy Education Institute	Eugene	3
Project Manager	Advanced Solar	Eugene	

In addition to the two-year degree program the Institute delivers a number of significant professional development programs. They are:

1. The **Energy Management Certification (EMC)** is a two-week intensive energy efficiency workshop for practitioners. NEEI has trained more than 70 engineers, resource conservation managers, facility managers, HVAC technicians, and private citizens who are mostly from Oregon and the Northwest, although greater national interest is

immersing. The certification requires that participants implement an energy saving, verifiable measure prior to being awarded the EMC. Consequently, energy savings as a result of student projects is significant. Please see the EMC webpage for student testimonials and an independent case study of the program. (http://nweei.org/pages/?page_id=10)

2. The **Building Operator Certification**, Building Operator Certification (BOC) is a competency-based training and certification for building operators offering improved job skills and more comfortable, efficient facilities. Operators earn certification by attending training and completing project assignments in their facilities. Training topics include facility electrical, HVAC and controls, and lighting systems, indoor air quality, environmental health and safety, and energy conservation. BOC certification is recognized by employers in over twenty states as certification of value and benefit for operators in their organization.
3. The **Bonneville Power Administration Residential Auditor and Inspector Certification** program. This training is presented throughout the Northwest to prepare and certify residential auditors and installation inspectors who need certification as part of their work credentials. Working with the Northwest Public Power Administration, NEEI offers the BPA Certification when the demand is enough to create a class which is typically twice in one year.

NEEI also works closely with Northwest Native Americans. NEEI developed a very successful workshop for the tribes to prepare them for the BPA Certification exams and have worked closely with them on both residential and commercial energy efficiency.

4. The **National Sustainable Building Advisors Certification** program. The National Sustainable Building Advisor Program (NaSBAP) offers a 9-month certificate training course and exam specifically designed for working professionals eager to apply sustainable concepts to the buildings they design, develop, and construct. The Sustainable Building Advisor (SBA) course welcomes a diverse range of students drawn from architecture and planning firms, engineering companies, developers and contractors, government agencies, research institutions, resource conservation organizations, utilities and environmental consulting organizations.
5. **Customized Training** allows an organization the opportunity to specify the content of a specialized energy or sustainability training. An example of the over 90 different customized trainings conducted by NEEI includes:
 - Solar Water Heating,
 - Solar Photovoltaic Installation,
 - Commercial Energy Efficiency,
 - Addressing Residential Customer High Bills Complaints,
 - Datalogging,
 - Emerging Technology in Existing Commercial Buildings,
 - Lighting Fundamentals.

NEEI has taught courses around the US and internationally in Argentina, New Zealand, Cyprus, and most recently in Beirut, Lebanon.

6. **Utility Sponsored Workshops and Trainings.** NEEI has contracted with the Eugene Water and Electric Board to offer trainings and events throughout the year that promote energy efficiency and energy conservation. NEEI and EWEB work closely to identify target audiences and to tailor the offerings satisfying a variety of different end-user groups. 2008 EWEB sponsored events will include two Integrated Design Workshops, a presentation by noted lighting designer Jim Benya,, a Core Performance workshop for designers and engineers, and a workshop for building operators titled “Finding Opportunities for Energy Savings” that encourages energy savings through good building maintenance practices.

The NEEI is working with the Lane Community College Administration to design and build an energy efficiency / sustainability demonstration building in the Eugene downtown core. The building will be developed with the theme “Buildings that Teach” as a central design characteristic. Students locally and via the internet will be able to “dial up” the building to check its performance under different weather and operational conditions.

The Energy Management Program and NEEI contributes to Oregon, the Pacific Northwest, and the national energy Industry by serving on a variety of energy related board of directors and as a technical advisor to energy related projects A short list of boards that Roger Ebbage serves on include the:

1. Oregon Limited Renewable Energy Technician License and Solar Thermal License Joint Apprenticeship Training Committee (JATC)
2. Oregon Institute of Technology Renewable Energy Systems Degree Program
3. The North American Board of Certified Energy Practitioners (founding member and current alternate board member)
4. Institute for Sustainable Power (Executive Committee)

Ongoing technical advisory projects:

1. Partnership for Environmental Technology Education (PETE).
2. Advanced Technology Environmental Education Center at the Eastern Iowa Community College
3. Renewable Energy & Energy Efficiency Workforce Education Conference (2006-2008 conference organization committee)

Ebbage has provided advice and curriculum to community colleges interested in starting programs in both renewable energy technologies and energy efficiency.

The Energy Management Program has become a model of industry supported energy education. Partial support for the program is now recurring through the generous donations made by the Eugene Water and Electric Board, Oregon Department of Energy. The Northwest Energy Education Institute’s programs continue to gain in popularity attracting participants from national and international organizations and therefore, help to financially support the program. The Energy Program is a national jewel.

**LANE COMMUNITY COLLEGE
ENERGY MANAGEMENT PROGRAM
YEAR-END SUMMARY
2008-2009**

Program Summary

The Energy Management Program is experiencing continued growth in the number of students who are entering the program and what the program has to offer.

The students / graduates continue to be pursued by employment opportunities from a national employment market in a variety of positions ranging from energy analysis to resource conservation management. Regional concern regarding workforce development in both renewable energy and energy efficiency began to surface in infrastructure discussions with the Energy Trust of Oregon, The Northwest Energy Efficiency Alliance and the Bonneville Power Administration. Consequently, the Energy Management program is being consulted regarding workforce training. Program management staff played an important role on the workforce development committee of the region's Northwest Energy Efficiency Taskforce.

STUDENTS

ENROLLMENT:

30 students returned for the second year of their program. Typically, we have an equal split of 50% of our students going into to the energy management side of the program and the balance going into the renewable energy program. This past year has been somewhat different with a few more going into the energy efficiency option of the program. Forty seven students began their first year of the program.

INTERNSHIPS:

Our internship program continues to provide a wealth of practical experience for our students. The table below lists EWEB interns and related internship credit hours completed.

Energy Management Students completing Cooperative Education Internships for Eugene Water and Electric Board

Term	# of Students	# of Credits
Summer 2008		
Fall 2008 *	3	10
Winter 2009 *	5	16
Spring 2009	3	10

* Includes students working with EWEB staff on BPA funded project

Placement:

We have our usual high placement rate. All students who are interested in finding employment do. We are experiencing an increase of position postings from around the country. The workforce demand is so intense that some students are leaving the program before completing which is their choice. We discourage leaving before earning the energy AAS degree but students have goals that are satisfied by employment in family wage positions with benefits.

CURRICULUM

The prerequisite of math 70 (see 06-07 report) did not discouraged enrollment. It has made the program manageable for most of the student since they now come prepared with math well in hand. We have finely tuned our sustainability course to more specifically focus on sustainability in the built environment. We expect this course to prepare students for a more diverse employment opportunity.

The Energy Management Program began a new degree fall of 2008. The Water Conservation Technician AAS degree began with full enrollment. Please see the attached curriculum outline for additional information.

BUDGET

In 08-09 we saw increased interest in our NEEI training which reduces some of the budget burden. Unfortunately, we are never at ease with our budget so we present as many NEEI trainings as possible to back fill the budget deficit that we constantly run. We have been successful so far and with the increased interest in the program we should manage our budget this year as well. We have been approached by some large corporations who are interested in helping to disseminate the program to other community Colleges nationally. Please see the attached budget for SY 08-09.

The Program resubmitted a proposal (a modification of last years' proposal) to the National Science Foundation (NSF) that would fund the work to put our energy program online. To date we have not heard from them but communications indicate extreme interest on the part of NSF to fund our proposal.

PROGRAM PROJECTIONS FOR 09-10

We expect to once again increase our enrollment in SY 09-10 which will mean 90 students entering fall 09. The increase will require that we conduct three sections of all of our first year classes. The challenge will be finding instructors. We are working with the college to fund the additional sections which will help the overall financial picture.

We launched our Water Conservation Technician Program this year, fall 08. We filled the program with 30 students and have 30 more registered for the fall of 2009.

We have completed work on the Resource Conservation Management Option to the Energy Management Program and have submitted the option to the state department of education for approval.

Respectfully submitted,

Roger Ebbage, Director
Energy Programs