

Pacific Northwest Center of Excellence for Clean Energy



Education Taskforce Meeting

Portland State University, University Place Hotel & Conference Center
310 SW Lincoln Street, Portland, OR 97201

December 8, 2011 10 am – 2 pm

In attendance:

Bob Bass, Portland State University
Lawrence Beaty, Idaho State University/ESTEC
Terrence Browne, Avista Utilities
Ryan Davis, Regional Education Training Center
Karen DeVenaro, Seattle City Light
Roger Ebbage, Lane Community College
Ryan Fedie, Chair, Bonneville Power Administration
Mark Fischer, WDVA – Veterans Conservation Corp
Erin Flynn, Portland State University
Jeff Hammarlund, Portland State University
Alan Hardcastle, WSU – Extension Energy Program
Loren Lutzenhiser, Portland State University
Jim Malinowski, Clark College
John McLain, Portland General Electric
Diane Quincy, Avista Utilities
Jay Pickett, Centralia City Light
Kairie Pierce, Washington State Labor Council
Mysti Reneau, Spokane Community College
Kevin Schneider, Pacific Northwest National Laboratory
Dennis Skarr, WDVA – Veterans Conservation Corp
Dave Sorensen, WestCAMP
Annette Talbott, Bonneville Power Administration
Bob Topping, Chemeketa Community College
Michael Wehling, Puget Sound Energy
Alisa Yannello, Bonneville Power Administration
Sally Zeiger Hanson, WSU – Extension Energy Program
PNCECE: Barbara Hins-Turner, Jamie Krause, Yvonne Chase and Monica Brummer

Call to Order, Ryan Fedie, Education Taskforce Chair

The September 22, 2011, meeting minutes were approved and adopted without changes.

Portland State University: presentations by Dr. Erin Flynn, Associate Vice President for Strategic Partnerships, Office of the President; Dr. Robert Bass; Dr. Loren Lutzenhiser; and Jeff Hammarlund

PSU Sustainability & Energy: Dr. Erin Flynn presented information on urban sustainability and how partnerships are important for long-term, strategic collaboration to enhance the economic, social, and environmental sustainability for the Portland metro area. The Institute for Sustainable Solution's core principles include integration across disciplines, community partnerships, campus as a "Living Laboratory" modeling best practices, and finding focused solutions.

A partnership between PSU and PGE was showcased as anchor institutions and leaders in clean technology research and practice, along with building the region's reputation for green leadership by developing and implementing urban sustainability practices. Projects include Energy Efficiency and the Build Environment, and Transportation Electrification. An example: Portland Electric Avenue was created as part of the electric transportation strategic plan through Portland General Electric and the City of Portland. One city block was retrofitted for exclusive electric vehicle parking.

Dr. Loren Lutzenhiser, a sociologist focusing on energy and human behavior, discussed redefining communities through energy efficiencies with state-of-the-art defined areas. Dr. Robert Bass discussed courses and research at PSU that include Electric Avenue's charging stations.

Smart grid programs: Jeff Hammarlund presented PSU's graduate seminar series called "Designing the Smart Grid for Sustainable Communities." The series emerged out of a request for collaboration from Portland General Electric in early 2008. PGE offered support both financially and technically along with other key stakeholders. The key course design elements, which were developed to address a newly identified need, serve both graduate students and the broader community intrigued with smart grid and its potential to support sustainability.

NW Demonstration Project, Lee Hall, BPA Smart Grid Program Manager

Lee Hall presented information about optimizing resources within smart grid and demand response. BPA is involved with Pacific Northwest Smart Grid Demonstration Project, Demand Response pilot projects, Thermal Storage objectives, and WECC WISP.

The Pacific Northwest Demonstration Project, a five-year, \$178-million (private and federal funds) project, is designed to quantify costs and benefits, develop communication protocol, develop standards, and facilitate integration of wind and other renewables. The project partners include BPA, Battelle, 11 utilities, two universities, and five vendors. The goal is to validate new smart grid technologies and inform business cases so utilities can make informed decision and optimize investments. The project will leave behind \$105-million in installed assets at the utility level. This is a collaboration of the region, testing 90,000 assets, across 68 asset system types. Also, the project will test a unique market signal called the Transactive Control System that will tie assets together and use two-way communication to optimize resources. The signal will "go live" September 2012.

The Demand Response project addresses the operational reserve and capacity constraints for wind integration and river management; transmission expansion challenges; and economic impact on utilities – rate structure includes a price signal for shaving peak. An example of demand response project is within the City of Port Angeles. There are 500 AMI-based water heating DR controls; 90 smart thermostats with home area network capabilities; 30 thermal storage devices for home heating; 30 thermal storage water heaters; and 1 thermal storage whole house furnace. Thermal storage objectives use residential end-use controllable loads to help integrate variable renewables such as wind and solar. The objectives implement one to three commercial/industrial end-use storage projects; and develop a demand response business case and marketing materials to support utilities. Participants are Spirae, Steffes Corporation, EnerNOC, PNNL, Montana State, Renewable Northwest Project, Horizon Wind, Energy Northwest, and Power and Conservation Council.

Western Electricity Coordinating Council, Western Interconnection Synchro-Phasor Project (WECC WISP) has \$108-million investment and nine partner entities. The object is to build a network of synchronized high-speed measurements and deploy real-time situational and control applications that use the measurements. The benefits will include improving reliability, unlocking transmission capacity, increasing reliable wind integration, and improving decisions on capital investments.

BPA is reviewing balanced authority load and total wind, hydro, and thermal generation for a one-week period. Example: What is wind producing at a certain time and location? Each day may be different. Lee also discussed shaving peak and the rebound concept, load shifting, and evaluating multiple technologies for both reducing and increasing load. There is a peak demand charge; trying to balance the difference.

Northwest Energy Efficiency Taskforce Discussion: Barbara Hins-Turner, Michael Wehling, Alan Hardcastle

The group is in the process of designing a proposal focusing on the next generation Customer Service Rep. positions with the NEET grant to present to NEET chair, Cal Shirley.

Barbara Hins-Turner asked if what we are proposing will help the region as a whole. Diane Quincy said that they will be receiving data from five different areas that may be useful. They are working out what the tools are to aggregate the information, what types of things do people have to go check on, and decision making points.

David Sorensen said that WestCAMP has some tools to analyze the data and drivers driving the outcomes available. Roger Ebbage said that hiring someone to analyze the data might be an option. Diane Quincy said that there will be a posting on the skills, knowledge, and abilities that Avista will be asking for in a meter position. Diane will gather and send the information to everyone.

Center for Energy Workforce Development (CEWD) Report: *Careers in Energy Week*, Yvonne Chase

Washington Gov. Christine Gregoire (and Spokane Mayor Mary Verner) proclaimed October 17-22, 2011 as Careers In Energy Week to promote the need to build a smart-energy workforce. Washington joined 11 other states in supporting the national drive, coordinated by the Center for Energy Workforce Development. The proclamation designated the Pacific Northwest Center of Excellence for Clean Energy, through collaboration, to organize statewide events to inform Washingtonians about rewarding careers and training opportunities in energy. Five events brought energy career awareness 368 students, 68 K-12 counselors, and 15 volunteers. Events included:

- Careers in Energy at the Regional Education & Training Center (RETC), Satsop Campus, Elma, WA. Nearly 100 students and instructors from five high schools participated in energy related activities through the Incremental Systems web-based grid simulator, the Industrial Controls Systems Technology Lab, WSU energy efficiency presentation, and a tour of the never-fueled power plant.
- Expand Your Horizons at Gonzaga University. More than 100 Girl Scouts participated in STEM and energy related activities.
- K-12 Apprenticeship Appreciation workshop held at Spokane Community College/Institute for Extended Learning, in Ione, WA. Activities included counselors and students learning about pre-apprenticeship and apprenticeship opportunities and a tour of the Seattle City Light Boundary Plant.
- K-12 Apprenticeship Appreciation workshop held at Avista Utilities Jack Stewart Pre-apprenticeship Lineworker School. After the workshop, tours of the following were offered: substation, lineworker school, demonstration of fusing gas pipe, and how underground electrical is installed.
- Career Expo at Shelton High School, in partnership with Tacoma Power. Students learned about the Centralia College AAS Energy Technology/Power Operations program, energy efficiency, and lineworker careers.

CEWD Conference: Barbara Hins-Turner discussed the CEWD conference held in Washington D.C. Barbara presented on behalf of Avista Utilities on their Pre-apprenticeship Lineworker School.

PNCECE Smart Grid Project Presentation, Jamie Krause

Smart Grid Project year 2 work plan summary. Jamie discussed the work that industry partners need in addition to the regional universities for Oregon, Idaho, Washington, Utah, and Montana. The regional project partners with 13 sub-recipient contracts, curriculum development and lab equipment, K-12 outreach, research, veterans outreach, and communication. The organizations were listed for each.

Seattle City Light Meter Lab Update: Karen DeVenaro discussed the Smart Grid meter lab and the progress thus far. Karen relayed that the building that houses the lab is about 15,000 square feet dedicated to meter training. The building took some time to get ready. A possible tour and presentation will be available this summer.

Curriculum Development, Bob Topping & Jay Pickett

The last Curriculum Development meeting was held in Pocatello, ID. All members were impressed with ISU/ESTEC facility and the partnerships they have developed

Avista - Introduction to Substations Learning Module Overview: Terrence Browne presented the interactive template of the substation and transmission equipment: introduction to substations, electric craft training module. The navigation part of the module was presented along with the content. Items reviewed were substation, transmission, equipment, course index, module 1, purpose, outcomes, functions of a substation, electric grid, substation equipment, introduction to substations knowledge check, intro to substations knowledge check 2, grounding systems and equipment, substation one lines or operations, substation log books and documentation, grounding systems and equipment, introduction to substations knowledge check 3, substation one lines for operation, substation log books and documentation, etc. The module is similar to General Physics Inc. Diane Quincy said that the grant is part of the open domain so no logos, etc. will be added. The module is also designed to run on a Learning Management system but isn't ready to distribute to the public just yet. This is one of seven modules being created.

Job Hazardous Analysis, Bob Topping

National Utility Training & Education Center (NUTEC), Richland, WA. Hazardous training will be at the NUTEC center next year. The learning environment will help eliminate job hazards within the job site. The goal is to take the old analog world, make sense of it, bring it into the new generation, and create value.

Website Review, Monica Brummer

PNCECE's website was reviewed and new graphics were unveiled. The website is valuable to students, job seekers, industry, educators/trainers, apprentice, and pre-apprentice. Different resources of information on the website related to research, skill panel, smart grid, training, publications, careers, the annual Summit, and information on the CoE were displayed.

A new interactive graphic was donated from Idaho Power and shows where careers are located within a power grid. The interactive graphic has clickable links from the different supply and demand side occupations. The information used describes the various occupations from the Career Lattice, developed by WSU – Extension Energy Program. Once a user clicks on a link, he/she will be able to view wage information and careers pathways. Additional jobs will be added in the future.

Dennis Skarr suggested adding Facebook or a LinkedIn page to the website as an added feature.

Upcoming Meetings

Ryan Fedie discussed the next Education Taskforce meeting to be held at Montana State University, possibly April, 2012.

Barbara Hins-Turner discussed the Summit Dates, June 21-22, 2012 with possibly adding a pre-summit educator forum on June 20. Barbara also mentioned the STEM Summit will be held in February 2012.

Good of the Order Jeff Hammarlund offered a tour of Portland's Electric Avenue.

Meeting Adjourned at 2:05pm
