

Governance Board

The Governance Board serves to provide oversight and direction for the Department of Energy Smart Grid Workforce Grant. Comprised of members from industry, education, labor, and other organizations, the board provides strategic guidance to grant staff and partners, reviews budget expenditures, and serves as a resource for grant partners to ensure grant goals are achieved. The board meets quarterly in person and monthly via webinar.

Members of the Governance Board:

Troy Nutter – Puget Sound Energy (Chair)
Ryan Davis – Everett Community College
Karen DeVenaro – Seattle City Light
Don Guillot – Int'l Brotherhood of Electrical Workers Local 77
Mike Hanson – Avista
Alan Hardcastle – Washington State University Energy Program
Peter McKenny – Gonzaga University
Tom McLaughlin – Center for Advanced Manufacturing Puget Sound
Kairie Pierce – Washington State Labor Council
Lawrence Beaty – Idaho State University, Energy Systems Technology & Education Center (ESTEC)
Kevin Schneider – Pacific Northwest National Laboratory
David Sorensen – WestCAMP, Inc.
Bob Topping – Regional Education and Training Center



Troy Nutter, Manager, Operational Training, Puget Sound Energy, Governance Board Chair

Alternates:

Ahmad Bennett – Veterans Conservation Corps, Washington Department of Veterans Affairs (WDVA VCC)
Bob Guenther – Int'l Brotherhood of Electrical Workers Local 77
Alice Lockridge – Seattle City Light
Jilliene McKinstry – Gonzaga University
Collin Sorensen – WestCAMP, Inc.
Sally Zeiger-Hanson – Washington State University Energy Program

Ex-Officio/Staff:

Barbara Hins-Turner – Executive Director, PNCECE
Marla A. Miller – Centralia College
Vicki Oakerman – Centralia College
Monica Brummer – PNCECE

Education Taskforce



Ryan Fedie, an engineering service manager,
Energy efficiency, Bonneville Power
Administration

Smart Grid Education Taskforce

The Pacific Northwest Center of Excellence for Clean Energy Education Taskforce will:

- Identify, revise and/or expand curriculum focused on Smart Grid Education and Training using design standards and skill standards for occupations within established deadlines.
- Evaluate and revise curriculum goals annually.
- Redesign career progression within and between target occupations and between utilities, removing and reducing barriers for job progression.

Active members of the Taskforce are:

- Ryan Fedie, [Bonneville Power Administration](#), Chair
- [Avista Utilities](#)
- Cascadia Community College
- [Centralia City Light](#)
- Chemeketa Community College
- Clark Community College
- Edmonds Community College
- ESTEC Idaho State University
- Gonzaga University
- [IBEW Intl Locals 77 and 125](#)
- Incremental Systems
- Lane Community College
- North Seattle Community College
- Pacific Northwest National Laboratory
- Portland State University
- [Puget Sound Energy](#)
- Regional Education and Training Center
- [Seattle City Light](#)
- Spokane Community College
- Veterans Conservation Corps, Washington Department of Veterans Affairs
- Washington State Labor Council
- Washington State University, Extension Energy Program
- WestCAMP, Inc

SMART ENERGY



"A Centralia College Partnership"

Creating a Regional Smart Grid Workforce

Governance Board

Grant Management

Education Taskforce

Advisory • Clearinghouse • Leadership

Validate relevance of working group outputs;
link resources, people, and ideas
to achieve project goals

INDUSTRY • LABOR • EDUCATION • VETERANS

Project Goals

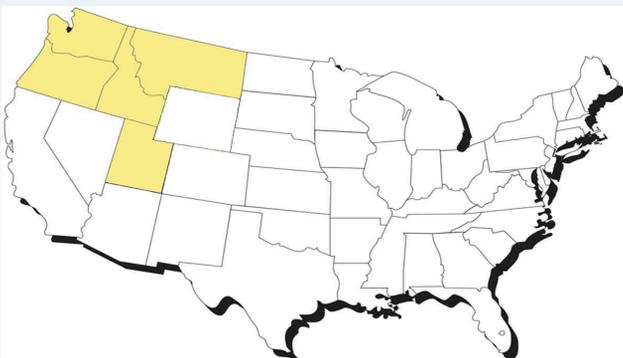
Design and deliver
smart grid
training

Create a smart
grid training
web-based portal

<http://cleanenergyexcellence.org>

Share best practices
on smart grid
workforce development

Five-State Consortium



Smart Grid Enabled Workforce

- K-12
- Pre-Apprentice
- Apprentice
- Incumbent Workers/Professional Development
- Veterans
- Train-the-Trainer

Curriculum Development Subcommittee



Jay Pickett, Industry Lead,
Northwest Territories Power Company (Canada)

The Education Taskforce Curriculum Development Subcommittee was being sponsored, funded and coordinated through the efforts of the Pacific Northwest Center of Excellence for Clean Energy. This subcommittee is charged with developing uniform and standardized targeted curriculum that defines and integrates smart grid technology into the regional training platform for energy supply side and demand side occupations. Curriculum will focus on aligning smart grid technology deployment and associated safety and hazard prevention with established regional skill standards. Governance and reporting of the Curriculum Development Subcommittee activities has been assigned to the Education Taskforce as outlined in the requirements and expectations of the Pacific Northwest Center of Excellence for Clean Energy grant.



Bob Topping, Education Lead,
Regional Education and Training Center

Subcommittee Members:

Jay Pickett, Co-chair/Industry Lead,
Northwest Territories Power Company
(Canada)

Bob Topping, Co-chair/Education Lead,
Regional Education and Training Center

Tom Barr, Edmonds Community College

Lawrence Beaty, Idaho State
University/Energy Systems Technology
Education Center

Karen DeVenaro, Seattle City Light

Jeff Hammarlund, Portland State
University

Mike Hanson, Avista

Lauren Huckaba, Avista

Jamie Krause, Pacific Northwest Center of
Excellence for Clean Energy (Staff)

Gail Alexander, Cascadia Community
College

Kevin Schneider, Pacific Northwest
National Laboratory

Case for Action: The primary responsibility of electric utilities is to supply consistent, reliable, and affordable energy to communities, private customers, businesses, and industries. As with many businesses, electric utilities are experiencing the effects of an aging workforce and are

expending considerable resources to skill-up their current workforce and train new workers to deploy technology associated with Smart Grid.

Recent events and natural disasters have highlighted to everyone our region's dependence on the supply and distribution of consistent electric energy. These realities are raising the expectations for the electric utilities' workforce. To complicate matters, the electric utilities are asked to incorporate Smart Grid technology into their current infrastructure while relying on an ever-aging workforce to meet the needs of their customers. More than half of the project target occupations are populated by workers eligible to retire.

Smart Grid technologies offer a great potential to support a wide range of benefits, such as energy efficiency, demand response, distributed generation, integration of intermittent and renewable resources and energy storage. They also open up prospects for new business models that enhance opportunities for partnerships among utilities, their customers and other stakeholders.

In this time of great change in technology a need exists for Smart Grid technical training curriculum design, outcomes, and features to align new and existing standards and technical training.

Purpose and Intent: The purpose of the Curriculum Sub-committee was to endorse Smart Grid Technology curriculum designs that align with established skill-standards of key energy workforce occupations. Key energy workforce occupations targeted and defined by the project are categorized as (a) Supply side (electric generation, transmission and distribution), and (b) Demand side (customer focused) utility professions.

The intent of endorsing and aligning curriculum with targeted occupational skill profiles is to assist electric utilities throughout the region to deploy Smart Grid initiatives.

Scope: The work of the Curriculum Subcommittee focused on gathering, reviewing, aligning and endorsing new and existing supply side and demand side training curriculum to meet the intent of the project.

The Curriculum Subcommittee will survey project partners to identify new and existing training curriculum that is being designed or reconfigured because of Smart Grid deployment. (WSU Extension Energy Program is executing this element.)

The Subcommittee set a standard for endorsing curriculum based on how it aligns with a skill profile and can be easily replicated by project partners in the grant region. The emphasis will be on endorsing skill profile alignment and best practices as a continuum for replicating technical training into four categories central to project deliverables.

Subcommittee Endorsed Training will be categorized into four categories:

1. Pre-Apprenticeship
2. Apprenticeship
3. Train the Trainer
4. Professional Development

Project Partners and associated training centers across the project region will serve as the primary recipients of Subcommittee endorsed curriculum. Endorsed curriculum will be distributed and disseminated as open sourced project training offerings throughout the region by the Pacific Northwest Center of Excellence for Clean Energy.

Curriculum Subcommittee Objectives:

1. Identify a working definition for Smart Grid
2. Create a design standard for curriculum endorsement that includes open source training content
3. Gather targeted occupations skill profiles (WSU Extension Energy Program executing this element)
4. Identify existing curriculum that needs to be redesigned and new material that needs to be developed to facilitate the delivery of Smart Grid training
5. Provide curriculum design guidelines for partners seeking endorsement of new and existing technical training
6. Review existing and new training curriculum for alignment with skill profiles
7. Review existing and new curriculum for ease of replication
8. Compile training "Best Practices" as open source curriculum for distribution by Pacific Northwest Center of Excellence for Clean Energy
9. Develop an action plan that defines roles and responsibilities with timelines and objectives to complete project deliverables

Smart Grid Manufacturing Taskforce



David Sorensen, Executive Director, WestCAMP, Inc,
Smart Grid Manufacturing Taskforce Chair

The Smart Grid Manufacturing Taskforce exists to promote job creation in the manufacturing sector which supports the implementation of smart grid technologies in the Pacific Northwest. Its mission is to drive economic growth and job creation by accelerating the commercialization of smart grid technologies in a region encompassing Idaho, Oregon, Montana, Utah and Washington. Small businesses create 80 percent of the new jobs in the economy. The Smart Grid Manufacturing Taskforce will focus on means to assist small qualified manufacturers—defined as a fabricator, assembler, or aggregator—with less than \$30 million in annual revenues, which have shown a profit in at least two of the previous five years.

Smart Grid Manufacturing Taskforce members include:

David Sorensen, WestCAMP, Inc. (chair) – National

Bradley Bertoch, SME Diagnostics and Wayne Brown Institute – National

Jason Caldwell, NetEndeavor – National

Ryan Davis, Everett Community College – Washington

Linda Fowler, Consultant – Washington D.C.

Steve Holland, Montana Manufacturing Extension Partnership

John Houston, Intermountain Electronics, Inc. – International

Roger Parish, Spectrum Consulting Group, LLC (SCG) – Oregon

Collin Sorensen, MEP – National

Gerald Sorensen, WPPSS – Washington

Robert Topping, Manufacturing Consultant/RETC – Western Region

John Vicklund, Impact Washington, WA Manufacturing Extension Partnership – Washington

Lynn Wickham, URS Corporation (Idaho National Labs) – Idaho

Why Manufacturing?

A major focus of the Pacific Northwest Center of Excellence for Clean Energy aims to improve the ability of regional power generating utilities and their employees to successfully implement smart grid technologies and processes. Effective grid modernization also relies on a network of

manufacturers who create and produce the technologies used in modern grid systems, and many of these manufacturers have roots in the Pacific Northwest. Extending the U.S. Department of Energy Smart Grid Workforce grant project to include key regional manufacturers will amplify the overall success of the project in several ways:

Workforce Pool: A strong local manufacturing workforce serves as a secondary talent pool for utilities which require highly skilled workers, especially in the technical trades and operations. The availability of workers with existing core competencies in advanced manufacturing tied directly to the electrical grid will help expedite new hiring and support the replacement of potentially large numbers of skilled utility workers who are eligible to retire.

New Job Creation: Grid modernization increases the knowledge, skills and abilities required of the utility workforce, but it is not likely to create many new utility jobs. New smart grid technology development and manufacturing has the potential to generate new company start-ups and expansions of existing manufacturers to support component and system production and integration. Substantial investments in modernization will boost demand for grid technologies, and manufacturers will in turn increase hiring to meet this new demand, creating new high-wage jobs in the region.

Core Economic Growth: Manufacturing growth is critical to sustainable economic growth. Without the capacity to transform materials and intellectual innovation into finished products, other sectors of the economy cannot flourish. Manufacturing growth spurs growth in other sectors including local demand for regional utilities. Living-wage manufacturing jobs also generate an economic ripple-effect that can stimulate new business growth, increase tax revenues and boost demand for services within local communities, boosting regional economic prosperity.

SGMTF Required Grant Outcomes

The Smart Grid Workforce Grant has three required deliverables surrounding manufacturing:

1. The creation of a Manufacturing Interface Taskforce to provide recommendations for curriculum and program updates.
2. Create a centralized manufacturing interface where Smart Grid Technology Manufacturers and vendors can demonstrate the performance of their goods and provide training on their use and implementation.
3. Create an online forum where Smart Grid Technology Manufacturers and vendors can demonstrate the performance of their products.

SGMTF Valued Added Outcomes

Building on the grant requirements and the insights learned during the first year of the grant.

The taskforce will accomplish these deliverables by:

1. Creating a regional model for identifying small qualified manufacturers with high probability of success to deploy smart grid technologies leading to long term sustainable job creation.
2. Identifying and mapping common workforce core competencies in the utility sector, manufacturing, and military veterans to identify opportunities and execute skill up training with rapid return on investment for both utilities and small manufacturers.
3. Create a portal of data resources for small manufacturers, workers seeking careers in manufacturing, aggregators, and utilities to facilitate opportunities for future growth.

SGMTF Year Two Process and Outcomes

Year Two will focus on the creation of an economic and workforce model by identifying, surveying, and benchmarking existing Small Qualified Manufacturers (SQM). SQM is an existing manufacturer with \$10-\$30 million in gross revenues. The model will have a threefold impact by 1) helping SQMs identify new product line opportunities in the smart grid marketplace 2) creating evidence based metrics to predict SQM future success in order to leverage capital investment for expansion and job creation 3) identifying workforce synergies between the expanding SQMs and military veterans to provide a skilled pool of workers to meet the needs of the manufacturing and utility sectors.