

Center Name: **Pacific Northwest Center of Excellence for Clean Energy**

Core Expectations	Activity #1: INDUSTRY	
<div><input checked="" type="checkbox"/> Economic Development</div> <div><input checked="" type="checkbox"/> Sector Strategy</div> <div><input checked="" type="checkbox"/> Ed/Innovation/Efficiency</div> <div><input checked="" type="checkbox"/> Supply/Demand</div> <div><input checked="" type="checkbox"/> Equity &amp; Access</div>	<div><b>Strengthen advocacy and community partnerships</b></div> <div><ul style="list-style-type: none"><li>Continue to build upon and develop a portfolio of clean energy/technology partners.<ul style="list-style-type: none"><li>Work closely with stakeholders to listen/learn about emerging technologies.</li><li>Continue to invite emerging technology experts to meetings; invite to join the center’s Advisory Board if needed.</li></ul></li><li>Create broader partnerships and alliances with organizations.<ul style="list-style-type: none"><li>Increase or continue involvement with Career Connect Washington*, Center for Energy Workforce Development (CEWD), CleanTech Alliance, Lewis County Economic Alliance, Lewis County Renewable Energy Task Force, NW Energy Efficiency Council, PNW Hydrogen (hub) Association (PNWH2), WA Dept. of Commerce, and other industry organizations as they emerge.</li></ul></li></ul></div> <div>*Created separate activity page for this partner</div>	
Funding Sources %	Purpose	Projected Outcomes and Products
CoE Allocation 90% (Workforce summit includes CCW partnership – 10%)	To meet Washington’s climate and DEI initiatives, industry and its workforce need to adapt to and work alongside of new and emerging technologies. The center needs to provide nimble support within industry to report the best workforce gaps and needs to our education system.	<div>~Workforce Summit – host/co-host one event that focuses on clean energy/technology workforce trends/gaps/needs. **</div> <div>~Attend at least two events to build industry knowledge and outreach. Q1 and Q4</div> <div>~Attend CleanTech Alliance (CTA) Board of Director meetings and events. Q1 – Q4 *</div> <div>~Continue work with the PNWH2, create a new activity page if funded. Q2+</div> <div>~Attend CEWD’s West Coast Regional Consortium meetings to work on collaborative career awareness promotions. Q1+</div> <div>~Serve on PSE’s Generation Apprenticeship document review committee.</div>
Report and Analysis on Actual Outcomes and Products/Activity #1		CoE_CleanEnergy
Q1	<div>We had an amazing first quarter as we continued to build contacts and partnerships. In every large, public, in-person event, I ask workforce questions that involve CTC training. Asking questions is a way of introducing our work. Responses, which are always positive, lead to more connections and network building. Highlights of Activity #1:</div> <div><ul style="list-style-type: none"><li>Continued to participate in updating the U.S. Department of Energy’s Hydropower Roadmap and invited Washington’s hydropower GM’s to contribute to surveys and join discussions (national/virtual).</li><li>Hosted an in-person community fusion forum at CC for Zap Energy. Introduced Zap’s VP to Bonneville Power, Centralia City Light, and Lewis County PUD representatives.</li><li>Attended AFV-TAG Green Transportation Expo, in Tacoma, and Renewable Hydrogen Expo, In Portland. Found EV training and future equipment donations for colleges (we hope). (both regional outreach)</li><li>Attended WSU/PNNL Advanced Grid Institute in Tri Cities. Avista was awarded a grant that includes several states and universities. I inquired publicly about where 2-year colleges and union training fit in – which led to a great discussion. Last year, this event didn’t include any workforce discussions. Workforce topics are now included. (regional outreach).</li></ul></div>	

	<ul style="list-style-type: none"> <li>Met with WSU's Vice Chancellor Kate McAteer twice to discuss workforce collaboration opportunities. Kate agreed to join CoE's Advisory Board.</li> <li>Attended monthly CEWD West Coast Consortium meetings and invited industry, deans and faculty to attend. (virtual/regional)</li> <li>PSE had one meeting to review dam operator apprenticeship duties.</li> <li>Met with SEI, NW Energy Efficiency Council (NEEC) and community members to discuss supporting a Climate Corp/Energy Fellow program in Lewis County. The discussion led to SEI securing funds for two fellows who will work on promoting solutions to address Washington's Clean Building Act, HB 1257. We will add this to our report as a new activity in Q2.</li> <li>Aligned two Dept of Energy national laboratory contacts (NREL and ANL), involved with the Net Zero World initiative, to develop a sister city between Tocopilla, Chili, and Centralia. Both cities, which are similar in size and demographics, will experience the shuttering of a coal generation power plant.</li> <li>CC campus VIP Tour: Adam Day, First Mode, to review training areas and discuss site tours for students and equipment needs for labs.</li> </ul> <p>*Note about CTA Board of Director's meetings. Quarterly meetings conflict with Career Connect Washington meetings. CCW invited us, as sector co-leaders, to present industry networking information. Mel suggested that I represent our role at the CCW meeting vs attend the CTA Board of Director's meeting this quarter.</p> <p>**Note about developing a workforce summit: We are involved with planning events for future quarters. CTA, who we partner with in gathering workforce gaps analysis, is in the process of replacing their workforce development manager, who resigned in July. CTA also contracted with Eileen Quigley at Clean Energy Transition Institute to assist with analysis and reporting.</p>
Q2	<ul style="list-style-type: none"> <li><b>TransAlta.</b> Met with Lori Schmitt, Sr Advisory and US Stakeholder Relations/TransAlta, to discuss TransAlta's workforce and training needs as the plant moves closer to closure at the end of 2025. She surveyed current workers to gather information about who's retiring and the type of training that will be needed.</li> <li><b>BioEconomy Conference.</b> The CoE, Centralia College, Twin Transit and the Lewis County Renewables Task Force hosted 65 guests during this late October event. Ecostrat presented the process of developing a Bioeconomy Development Opportunity Zone; and UofW researchers, students and faculty presented biofuel research that could result in a project within our state. <u>Next step:</u> Reviewing Ecostrat's report and promoting a good bio-feedstock grade.</li> <li><b>CoE Fall Advisory Board Meeting</b> included presentations by SKILLS USA, Career Connect Washington, and all of the energizing work we've done since May's meeting.</li> <li><b>PNWH2.</b> In November, our region's hub application was selected as one of seven projects throughout the nation for negotiations. This step, which could take up to nine months before awarding, involves a deeper dive of answering questions with quick turn-around deadlines. As a hub, we met weekly for updates and needs. Representatives of the hub and U.S. Dept of Energy held a virtual community forum Oct 30 to discuss all things hydrogen; and in December, the hub faced a Freedom of Information Act request, which took extra time to complete. <b>Government entities are working on procedures. One to watch: IRS 45V Clean H2Tax Credits and renewable energy resources.</b></li> <li><b>Center for Energy Workforce Development (CEWD)</b> annual conference. Takeaways: Our industry has to balance decarbonization initiatives, diversifying the workforce, adding emerging technologies, and working with an aging infrastructure with supplying affordable, reliable, sustainable clean energy. It is facing similar issues across the nation: competition for engineers and IT employees; lack of security in the field, highest attrition rates in history, overall lack of energy career knowledge, and fear that technology is moving faster than training opportunities. There is no secret sauce. No magical answer - other than communication, partnerships and time. CEWD's Executive Director is chairing the national 21<sup>st</sup> Century Energy Workforce Advising Board that reports directly to the U.S. Secretary of Energy, Jennifer Granholm. <ul style="list-style-type: none"> <li>Monica is active with CEWD's committees that are researching an energy technician training program and a national Cybersecurity apprenticeship program. <b>Please encourage the Washington's Workforce Training &amp; Education Coordinating Board in recognizing</b></li> </ul> </li> </ul>

**Clean Energy as our state's 17<sup>th</sup> Career Cluster.** The 21<sup>st</sup> Century Energy Workforce Advisory Board will encourage the U.S. Secretary of Energy, Jennifer Granholm, to make this a call of action nationally.

***Are you ready to save the planet, today? Can you accept the challenge?** We are addicted to fossil fuels. The planet is at risk and people are dying – today – from heat and humidity. Take the tough challenges. Do the things people say not to do; because normally, what you're told not to do, is not possible. Do the impossible. We need zero carbon emissions. If it's not zero, it is not enough. ~ Andy Vesey, President/CEO Fortescue, North America; Catalyst H2 Keynote; Working every day to fight climate change.*

- Monica attended Catalyst H2 in December and met some incredibly talented hydrogen advocates such as Andy Vesey, President and CEO of Fortescue North America, who encouraged attendees to continue working on hydrogen as a clean fuel and energy solution. Policy makers, tax advisors, energy producers and users filled the sessions and discussed the challenges that need to be won. Check out the [Advanced Energy Community of Lancaster, California](#). The city is years ahead of the rest of us and has been practicing zero emissions in electricity since 2019. Monica learned more about workforce needs during networking sessions than in the actual workforce panel session (she was asked to be on the panel but assumed she'd learn more by listening).
- **Climate Corps Fellows** supporting **Clean Building Bill, HB 1257** and K-12 education. We are partnering with SEI, Northwest Energy Efficiency Council, San Timoteo Energy Association, and community partners, such as Centralia City Light and Lewis County PUD, to support a Climate Corps Fellowship program that will address the energy efficiency requirements contained in Washington's Clean Building Bill, HB 1257. With SEI in the lead, they will hire and train two Fellows (college graduates) who will work full time from offices located at Centralia College. The program includes energy efficiency and energy auditing education and training. SEI is seeking funding through the Washington State Dept. of Commerce and TransAlta. We hosted/attended meetings involving utilities, school superintendents, city planners and community stakeholders.

**Other meetings** included: On-going meetings with CleanTech Alliance (**Net Zero NW** workforce reported, noted in Q1, was published and added to our website [https://www.cleanenergyexcellence.org/wp-content/uploads/2023/11/CETI\\_Net-Zero-Northwest-Workforce-Analysis\\_Key-Findings\\_2023-11-02.pdf](https://www.cleanenergyexcellence.org/wp-content/uploads/2023/11/CETI_Net-Zero-Northwest-Workforce-Analysis_Key-Findings_2023-11-02.pdf); met an **Eisenhower Fellow**, Lukas Trakimavicius from Lithuania, at the **Dept of Commerce** to share energy workforce training best practices; presented energy workforce information on a "Future of Energy Panel" at the **Economic Alliance Expo**; met with SEI, set up community meetings; met with staff at **Lewis County PUD** to discuss the Clean Buildings Act and Energy Efficiency in commercial buildings.

**\*\*SEI project is moving slowly.** Sei sought funding for 2 Climate Fellows in Q1 and reported in Q2 that one fellow might be funded. I asked for definition of 66 tier one commercial buildings and am not getting answers from Dept of Commerce or SEI. Trying to build a third fellow to assist with K-12 activities, with TransAlta funding which is moving slow as well.

**\*\*PNWH2** does take time for meetings and extra documentation.

**\*\*A lot of money is available in federal and state grants** which is driving businesses to chase funds. Some projects that reach out to us don't match needs of the sector. Timelines for grants are often too quick for us to process.

Q3

- **Climate Corps Fellows.** We are finalizing the contract between CC and SEI for the two fellows. The contract will be reviewed by our AGI and will be set up for other CTCs. WA Dept of Commerce/Clean Buildings is submitting a grant proposal to the US Dept of Energy requesting \$4 million to hire up to 60 additional Fellows over a three-year period. If awarded, these Fellows will be placed throughout the state to work with CTCs, utilities and commercial building owners. Centralia College's Fellowship program will serve as a model for the rest of the state. If CTCs aren't interested in hosting, then utilities will be asked. The goal of this program – hire recent graduates into a one-year, fully benefitted position to give students an opportunity to gain experience while assisting utilities and building owners.
  - Note: We received funding approval from WA Dept of Commerce and TransAlta to support two Climate Fellows. One will focus on energy auditing/Clean Buildings Act, supporting commercial buildings; and the second will focus on K-12 outreach. Both will be hired and managed by SEI. Centralia College will provide office space and will participate in additional training.
- Served as a pre-application reviewer for the **Bipartisan Infrastructure Law Rural and Municipal Utility Cybersecurity Advanced Cybersecurity Technology grant**. This program's investments will improve the cybersecurity resilience of electric utilities in rural communities, decrease energy burdens on utility members and customers, and increase the cybersecurity knowledge, skills, and abilities of

	<p>utility employees in rural communities. The US Dept of Energy/Cybersecurity division reached out and requested assistance. Monica reviewed seven applications outside of work hours and gained insight to how utility cyber in operations technology works.</p> <ul style="list-style-type: none"> <li>• <b>Renewable Energy Community Forum.</b> We hosted a community forum at Centralia College to answer community questions about hydrogen and biofuels. Monica participated as a panel member, representing workforce and training opportunities. Other panel participants included Joe Clark of Lewis County Transit, Lewis County Commissioner Lindsey Pollock, Rob Cowin of Fortescue, Adam Day of First Mode, and Bob Russell, consultant for biofuels. The event was sponsored and organized by the Economic Alliance of Lewis County. Most community questions and concerns focused on hydrogen production and use – such as where the power and energy will come from (which are needed to produce hydrogen). The Economic Alliance chose to host this event due to negative comments in local social media. Additional comments were made for about a month after the event (some of which weren’t based on facts).</li> <li>• <b>PNWH2.</b> Monica presented updates of hydrogen workforce/training projects that are either led by or in partnership with the CoE to the US Dept of Energy Office of Clean Energy Demonstrations (OCED). First presentation was in Bellingham in January. It was short but energizing enough for the OCED team to request a visit to Centralia College in March. We then hosted 40 people in person and 22 online and presented our hydrogen workplan and community benefits projects. Monica attended a short meeting the next day in which OCED was very complimentary and appreciative of the work that we are doing.</li> <li>• <b>CEWD West Coast Consortium.</b> To help increase membership and make this consortium more active, Monica agreed to co-chair this industry/education led consortium. Our first online meeting will be in Q4.</li> <li>• <b>Other meetings,</b> not mentioned above or below, included: Regular meetings with CleanTech Alliance, Career Connect WA, AFV-TAG (EV), FWEE, TransAlta, and <b>partnerships in other grants</b> involving carbon sequestration and capture; hydrogen training with PNNL; a heat exchange company; and First Mode. If funded, these will appear as new activities in 2024-25.</li> </ul>
Q4	<ul style="list-style-type: none"> <li>• <b>Climate Corps Fellows.</b> We interviewed and hired two Climate Corps Fellows. One will focus on assisting the college and local commercial building owners with laws addressing WA Clean Buildings Act. This Fellow is located in Centralia College’s FOM office and is supervised by the FOM director (Monica is back-up supervisor and attends meetings with SEI). The second Fellow, who focuses on assisting the CoE with K-14 outreach, is located in the CoE office and is supervised by the director. This Fellow completed CEWD’s online Energy Fundamentals 2.0 – using it from a student and a teacher’s perspective. She also assisted with the <i>SWW Energy/STEM Summer Academy by FWEE</i>, and will lead the academy next year. Industry outreach included: Centralia City Light, CEWD, City of Centralia, Chelan PUD, Cowlitz PUD, First Mode, Lewis County PUD, SEI, Tacoma Power, TransAlta, TransfrVR, and WA Dept of Commerce.</li> <li>• <b>CleanTech Alliance Innovation Showcase.</b> The CoE purchased two TransfrVR headsets to promote energy careers; and invited TransfrVR to showcase the product at the event. Two biggest wins for them: a follow-up meeting with Alex Dilley of Congressman Adam Smith’s office; and an invitation to participate in the IBEW Local 77’s Regional Trade Up conference in October. Also during this event, Monica presented information about the CoE, Career Connect WA and partnering with both to 30 attendees in a breakout session. In the room: Helion Energy, Snohomish PUD and Seattle City Light, who followed up with additional meeting requests.</li> <li>• <b>2024 Northwest Renewable Hydrogen Conference.</b> Monica emceed the conference which shined a light on the work that we do, plus opened the door for a host of new contacts including state representative Kristine Reeves, Plug Power’s Scott Spink and the Port of Pend Oreille/Pend Oreille Valley Railroad’s grant writer, Sarah Reaveley (H2 fueled locomotives).</li> <li>• <b>PNWH2.</b> Negotiations with the Dept of Energy OCED continued which involved meetings, updates to budgets, and several editions of subrecipient paperwork.</li> <li>• <b><a href="#">National Skills Center Clean Energy Training Policy Convening, WA DC.</a></b> Monica joined PGE David Fortney and CEWD Missy Henriksen plus 60 others to discuss trends and gaps within the energy workforce. Discussions focused on identifying state policies that are working for business leaders – particularly those policies that build and diversify the registered apprenticeship pipeline and those that help local businesses hire apprentices to take advantage of the IRA tax credits. Additional discussions included how industry-sector partnerships between employers, training providers, CTCs, community-based organizations, and labor organizations are critical to meet the needs of employers and workers alike. These models can inspire legislation in other states and further investment at the federal level. Take-aways:</li> </ul>

	<p>WA is experiencing the same issues as other states regarding energy workforce trends; the need for increased collaboration between partners has never been higher; some partner with GoodWill to reach DEI goals; some grants include transportation costs to get apprentices to worksites (bus and gas vouchers, shared transportation); and solar companies don't see solar installers as potential apprenticeships – they use roofers and need electricians, solar designers and a sales force that understands electricity and solar. Monica shared findings with Shoreline CC, CleanTech Alliance and Career Connect WA.</p> <ul style="list-style-type: none"> <li>• <b>CoE Advisory Board Meeting.</b> We focused on creating more time for listening and learning about the landscape of the industry and issues surrounding workforce development. Discussions included: How will all of the pieces fit together, with lower Snake River dam removal and the increases in electrification? With all of the new technologies, we are expecting more from the same number of employees. There is a big focus by policy makers that clean energy has a robust supply of availability. The demand can quickly outrun supply right now. Data storage and AI are also adding to demand. Building transmission lines is a 10-year process to move energy. Threats of wildfire on the east side plays a big role in planning, costs and what a shared energy economy may look like. Our utilities are concerned about weather extremes and how to manage the supply of energy during those hot/cold snaps – that's when renewables, such as solar, wind and battery storage don't work well. AND costs of renewables to create green hydrogen are so high that producing the green molecules will be difficult. Promoting energy careers started another conversation which led to creating a sub-committee to design a <i>Utility in a Box</i> project. The board also approved an updated advisory board charter. Terms limits were added as well as procedures for adding/dismissing members.</li> <li>• <b>PNNL led H2 Education/Workforce project.</b> A project led by the Pacific Northwest National Labs (PNNL), in partnership with WA Dept of Commerce, Centralia College, CoE, U of Utah, U of Connecticut, the Center for Hydrogen Safety, and Accenture. Phase 1 funding through the Dept of Energy's Hydrogen Fuel Cell &amp; Technology Office (HFTO) was announced late in the quarter which prompted planning of the first in-person meeting to be held at Centralia College in July. The CoE had been involved with informational meetings prior to funding announcement. Phase 1: hire Accenture to assess the demand, gaps and skill needs for a hydrogen skilled and technical workforce. Then build curriculum using AR/VR technology in subsequent phases.</li> <li>• <b>Other meetings:</b> Attended meetings organized by: The Center for Hydrogen Safety (membership h2 safety meetings), WSU Green Transportation Program, Career Connect WA, AFV-TAG, Capital STEM Alliance, NREL WorkGroup 8 (hydropower), and PNNL; as well as CleanTech Alliance Board of Directors meetings.</li> </ul>
Summary	<p>Technology in this industry continues to emerge and improve at a rapid rate; and keeping up with changes is challenging. Discussions of supply and demand are heavy as our leaders invite more manufacturers, data centers and electrification into our state. There is almost a false sense of urgency that's driven by politics, government funding and state initiatives. This industry is also tied to the (lack of) speed of the supply chain and Bonneville Power Administration.</p> <p>Overall, we made great connections and strengthened industry relationships across the state. Subsectors of energy that we were involved with included: battery manufacturers, biofuels, carbon capture/sequestration, electric vehicles (EV), fusion, hydrogen, hydropower, solar, and smart grid (missing offshore/onshore wind); and climate issues. By strengthening the relationship with CEWD, we were invited to attend discussions with the National Skills Coalition and were included within media articles with a regional and national reach.</p> <ul style="list-style-type: none"> <li>• Note: Dept of Energy requested that we continued to review the CyberOT proposals (100 pages each). We gracefully declined due to quick turnaround deadlines that conflicted with our schedules and work (mentioned in Q3 – Monica reviewed 7 12-page proposals in February).</li> </ul>
Core Expectations	<div>Activity #2: EDUCATION</div> <div>CoE_CleanEnergy</div>
<input type="checkbox"/> Economic Development <input checked="" type="checkbox"/> Sector Strategy <input checked="" type="checkbox"/> Ed/Innovation/Efficiency <input checked="" type="checkbox"/> Supply/Demand	<p><b>Strengthen education partnerships</b></p> <ul style="list-style-type: none"> <li>• Continue to build the Energy Educators' Association (EEA) statewide.             <ul style="list-style-type: none"> <li>○ Send targeted emails that deliver news, trends, opportunities, and labor market data.</li> <li>○ Develop workshops/forums for faculty and deans to include subject matter experts and networking.</li> <li>○ Support educators to enhance programs (provide trends/labor market materials/connections to industry).</li> </ul> </li> </ul>

<input checked="" type="checkbox"/> Equity & Access	<ul style="list-style-type: none"> <li>• Create broader partnerships and alliances with those we serve.               <ul style="list-style-type: none"> <li>○ Attend WEC, CTC energy program advisory board meetings; serve on CTC boards and committees.</li> <li>○ Collaborate with WA Dept of Commerce Workforce Development.</li> <li>○ Collaborate and support the NW Indian College.</li> </ul> </li> <li>• Continue to build and develop partners with STEM and K-12 ESDs to reach grades 8-12 and parents.               <ul style="list-style-type: none"> <li>○ Serve on committees for Capital STEM Alliance (Advisory Board) and Foundation for Water &amp; Energy Education (FWEE); and increase involvement with Bonneville Environmental Foundation.</li> <li>○ Distribute/share materials and opportunities for faculty and students.</li> </ul> </li> <li>• Identify a list of industry needs and potential funding for workforce development and prepare a crosswalk between them.</li> <li>• Assist CTC system with program needs including program reviews, funding needs, sharing information, news and labor data.</li> <li>• Track college program CIP codes as they relate to the center's work; and follow SBCTC's dashboard data that will showcase student demographics, enrollment and graduation rates.</li> </ul>	
Funding Sources %	Purpose	Projected Outcomes and Products
CoE Allocation 90% CCW 10%	As industry evolves and adopts new technologies it will need an adaptive workforce. It's imperative to keep our education partners abreast of news, trends and changes to support the educational needs of the workforce.	~Present industry news/trends in STEM & FWEE quarterly meetings. ~Send monthly emails to Energy Educators' Association. ~Update Energy Program Guide. (ongoing) ~Host workshops for EV and Energy faculty Q2 thru Q4. ~Co-chair Global Hydrogen Academia Work Group (meets every 6 weeks). ~Build a workforce partnership with WSU's Energy Workforce Team. (ongoing) ~Serve on advisory boards for Shoreline and Big Bend (Tech Hub Grant). ~Arrange a CTE lab tour of Bellingham Tech and other technical colleges. ongoing
Report and Analysis on Actual Outcomes and Products/Activity #2 <span style="float: right;">CoE_CleanEnergy</span>		
Q1	<ul style="list-style-type: none"> <li>• Although many Energy Educators' Association members were on leave over the summer, we sent a number of targeted emails to support industry events and job openings. Responses were mostly from deans asking for Chmura information and program support. For example, Yakima Valley CC inquired about re-vamping their energy program due to a one-year waiting list at Perry Technical College.</li> <li>• Invited deans to attend CEWD's meeting regarding the launch of Energy Fundamentals 2.0 (free, interactive, online energy education).</li> <li>• Supported Big Bend's Tech Hub application/project, called BATT (Battery Anode and allied Technology Transformation) Tech Hub. Submitted a letter of support and agreed to serve on advisory board.</li> <li>• Planned EV training for CTC faculty - at Clark College's Toyota T-Ten labs in Q2 (timing depends on lab and faculty availability). Working with Clark's new dean, Theo Koupelis, and SPSCC's Jason Selwitz, in planning the training. (regional/virtual)</li> <li>• Met with Lake Washington and Shoreline to discuss Good Jobs Challenge grant applications and will align them with future CCW grant opportunities. (virtual)</li> <li>• Continued co-chairing a global hydrogen academia workgroup for more workforce development research. Found EPRI, who are beginning to develop H2 training (global/virtual).</li> <li>• Connected Brent Lundstrom, director, CoE_Cybersecurity, to national and regional contacts: Cynthia Hsu, Dept of Energy Cybersecurity manager for utilities; Eli King, WA Dept of Commerce Cybersecurity manager; Mark Rice, PNNL's cybersecurity expert; Christine Reid and</li> </ul>	

	<p>Bob Guenther, IBEW-Local 77 CyberOT apprenticeship leads; and Dennis Skarr, Cyber faculty at Everett CC. Discussed with Brent to lead Cybersecurity in Operation Technologies for utilities.</p> <ul style="list-style-type: none"> <li>Toured labs at San Juan College's School of Energy, in Farmington, NM, and will share results with the CoE's advisory board – to demonstrate industry partnerships. San Juan has secured \$19.5M to construct the 64,000 square foot building that holds more than \$5M of lab equipment. (CCW funding).</li> <li>Began planning a clean energy summit at Big Bend CC to feature battery technology manufacturers and other new clean energy businesses. Introducing businesses to Moses Lake community, engaging in community and college training opportunities</li> <li><b>NEW: 2023 Clean Energy Technology Workforce Advisory Committee</b> under the auspices of WA Workforce training and Education Board and HB 1176. The Center was invited to join and attended weekly meetings to help with legislation asks. Led by Ilene Munk.</li> </ul> <p>Other meetings: attended CoE director's meeting, Capital STEM Alliance and FWEE meetings; met with Pac Mt Workforce Development ED and representatives; met with WSU Tri Cities to develop workforce strategies – to be continued through the hydrogen hub and advisory board work. Attended Centralia College Foundation's Scholarship Night to celebrate a student who won an energy scholarship - paid by Pat McCarty, retired from Tacoma Power and former CoE Advisory Board Chair.</p>
Q2	<ul style="list-style-type: none"> <li>Met with <b>Irene Shaver</b> to discuss partnering in 2024 on <b>climate/green jobs initiatives/Jobs of the Future CREST Challenge</b>. Our Center agreed to support her initiative which involves developing a green jobs agenda for WA CTCs. Irene suggested developing a pilot in each sector that helps develop best practices to improve the guided pathway—articulation and student support, recruitment, and responsiveness to community needs, and develop the curriculum to incorporate needed green skills that can transfer to other similar programs. The idea is most of our programs have the same suite of issues: Lack of curriculum for new green skills; entry, access, and enrollment issues; retention and student support; and guided pathways.</li> <li>Interviewed by the <b>National Community College Research Committee</b> for Green Jobs to share the work that we're doing in WA state. Suggested that they also meet with Irene Shaver. We both have been invited to attend a national meeting in Kentucky on April 6.</li> <li><b>EV Training for CTC faculty at Clark College</b>. Hosted more than 20 faculty represented nine colleges in our first in-person Electric Vehicle (EV) training, at Clark College. We toured the Toyota T-Ten EV and hybrid lab, received tips on building EV curriculum and lab sheets, listened to Twin Transit's EV/hydrogen transportation plans, and learned about hydrogen fuel cells in Toyota's latest vehicles. Big thank you to Mike Godard, Dannie Nordsiden and Theo Koupelis of Clark College, who helped with logistics and content; and WSU's Green Transportation for support and content. Those who attended represented faculty in automotive, energy and manufacturing programs. Gary at Shoreline agreed to support an in-person training session during spring quarter.</li> <li><b>Building the Future Energy Workforce at Big Bend Community College, April 11</b>. Recruited help from CleanTech Alliance to co-host a clean energy summit focusing on battery technology and BBCC's energy programs. Planning stages – to recruit speakers and seek sponsorships. This event will include representatives from Group 14, Sila and REC Silicon as well as tours of BBCC's related labs. We are seeking a video welcome from Governor Inslee, a keynote from Dept of Commerce as well as panelists for workforce development and state senators.</li> <li><b>REVIT DACUM</b>. Listed in Activity #4, this process will lead to two or three high school-college dual credit classes, as well as build pathways for additional college classes. The REVIT project, once complete, will be packaged for other school districts and colleges to use.</li> </ul> <p><b>Other meetings:</b> attended Shoreline's Advisory Board Kick-off event; CoE director's meetings, WEC, Capital STEM Alliance and FWEE meetings. Gave a hydrogen presentation to Centralia College's Board of Trustees.</p>
Q3	<ul style="list-style-type: none"> <li><b>Building the Future Energy Workforce</b> at Big Bend Community College. The CoE partnered with CleanTech Alliance and BBCC to plan an event showcasing emerging clean technology: battery manufacturing. The CoE provided sponsorship funds to support marketing and food for the event, flier and social media creation (thank you Emily), logistic support, and outreach to the governor's office. Monica worked with Inslee's team to produce a welcome video which was well received and appreciated. Q3 was all about planning, and since the event</li> </ul>



	<p>occurred April 11, more information will be included in Q4's report (a short summary was provided to Carolyn to share). Daneen Berry-Guerin, Beth Laszlo and Julia Gamboa are wonderful to work with!</p> <ul style="list-style-type: none"> <li>• <b>PNWH2.</b> After meeting with OCED in Bellingham, Monica arranged to introduce a representative of AltaGas, one of the area's key partners, to Ray Kubista at BTC. Ray gave us a wonderful tour of the lab facilities and introduced us to his VP and President. Alta Gas is working with BTC on training and community benefits plans – including donations to BTC's foundation for scholarships.</li> <li>• <b>SWW STEM/Energy Summer Academy by FWEE.</b> We formed a strategic planning committee and are working with FWEE to build a three-day pilot program in Lewis County. Planning committee includes representatives from: Bonneville Environmental Foundation, Lewis County Boys &amp; Girls Club, Centralia City Light, Centralia and Chehalis School Districts, Centralia College Upward Bound, Chelan PUD, Cowlitz PUD, ESD 113/Capital STEM, FWEE, Lewis County PUD, Mason PUD, NREL, SEI, and Tacoma Power. <ul style="list-style-type: none"> <li>○ Up to 24 students, entering grades 8 through 11, will learn about careers in energy through tours (a dam, fish hatchery, First Mode, and substation) and activities (hydro power, hydrogen car, fiber optics, lineman and safety).</li> <li>○ The Center will provide food and field trip transportation; logistics for student drop-off/pick up. The center also purchased hydrogen car experiments for all three FWEE Summer Academy locations (Centralia, Twin Cities and Wenatchee).</li> <li>○ NREL and FWEE are sponsoring this through a shared \$20,000 grant.</li> <li>○ Utilities are providing staff, on-site activities and tours.</li> <li>○ FWEE will organize registrations @ <a href="http://fwee.org/academy">fwee.org/academy</a>.</li> </ul> </li> <li>• <b>Centralia College</b> – Monica served on the Strategic Planning Committee and worked on a team with Dr. Mohrbacher that was charged with developing goals for community outreach.</li> <li>• <b>Big Bend Tech Hub</b> – unfortunately, was not funded.</li> <li>• <b>Climate and Pollution Reduction Act</b> grant. Assisted Carolyn and Irene @ SBCTC in partnering with the WA Dept of Ecology, who applied for a \$500 million grant. If awarded, the grant will provide the CTC system with funds for EV technology and a part-time CoE position.</li> <li>• <b>Other meetings included:</b> Shoreline CC energy advisory board, Snohomish STEM, Global Hydrogen Academia Workgroup (still active as a co-chair – group is more of a networking opportunity and will grow when the hubs are awarded). We also WEC – attended all of the social events too as well as met all Centralia College VPI candidates.</li> </ul>
Q4	<ul style="list-style-type: none"> <li>• <b>Building the Future Energy Workforce at BBCC.</b> We enjoyed partnering with BBCC's staff to showcase their CTE labs and programs associated with battery manufacturers - which are expanding in Moses Lake. <u>Event highlights:</u> 110 attendees; Governor Inslee welcome video; Keynote UW Dan Schwartz gave a great example of the speed with which the industry is evolving; an energizing workforce panel; participation from state representatives, legislators and battery manufacturers (Group14 and Sila Nanotechnologies); and connections for employers and job seekers. The CoE sponsored the event (dollars for marketing, refreshments and lunches for attendees), created the promotional material, and grew a deep appreciation for Beth Laszlo and Daneen Berry-Guerin, who are hard workers and amazing partners. President Sara Thompson attended the entire day and was very pleased on the turn-out and the results of this first-of-its-kind event. Takeaways: Group14 is planning to build the largest battery manufacturing facility in Moses Lake. They are hiring 150 ppl now and will have the capacity to hire up to 500 <u>IF</u> electric transmission is able to supply the amount of energy that the business needs. They are asking for more electricity than Moses Lake uses (130 MWh vs 120) and will require nearly four times as much to support the large manufacturer. If the energy requirements aren't met, they will move. Group14 resource article: <a href="https://basinbusinessjournal.com/news/2023/may/12/deep-charge-group14-breaks-ground-moses-lake-facto/">https://basinbusinessjournal.com/news/2023/may/12/deep-charge-group14-breaks-ground-moses-lake-facto/</a></li> <li>• <b>SWW Energy/STEM Career Summer Academy by FWEE.</b> The CoE hosted 18-21 high school students, who represented seven high schools as well as homeschool programs, in the area's first energy/STEM summer program. Students toured Mossyrock Dam and Powerhouse, Cowlitz Salmon Fish Hatchery, First Mode, Lewis County PUD and the science building at Centralia College. Activities, in addition to tours, included hydropower and hydrogen car experiments, utility pole climbing, fiber optic splicing, VR of careers, and learning about safety and dangers within the industry. The students were the first high school group to visit First Mode and to witness the power behind a dam</li> </ul>



	<p>spillway release. The CoE co-sponsored the event, with funds supporting the experiments, refreshments, lunches for students, travel to off-campus sites and advertising/recruitment. A cover story article will be featured in the NWPPA magazine next quarter. Takeaway: Through promotional efforts and success story sharing, utilities and education partners are interested in replicating the academy. We had requests from Spokane, Seattle and Moses Lake. Outside of this event, the CoE also provided H2 cars for two other academies which were located in Tri-Cities and Wenatchee.</p> <ul style="list-style-type: none"> <li>• <b>Other meetings:</b> Presented CoE and summer academy information to Lewis County superintendents; met with SBCTC and Dept of Ecology to support a \$500-million grant led by the Dept of Ecology (EV training for CTC system); attended meetings at Portland State University to discuss smart grid and battery technology training for NSF grant (met CWU representative); represented the CTC system at INTENT in Spokane – an NSF engines grant that advances energy and decarbonization technologies in Inland NW; co-chaired Global H2 Workforce Development Taskforce and led virtual and in-person meetings (at CHS Americas Conference); and presented WA energy industry and CoE information to a group of ASPIRE students who were traveling our area from universities across the U.S.</li> </ul>	
Summary	<p>We're building stronger relationships with deans and faculty within the CTC system, as well as regional STEM and ESDs throughout the state. Highlights include:</p> <ul style="list-style-type: none"> <li>• Supported Shoreline's CTE energy program through serving on the advisory board.</li> <li>• Co-hosted CEWD's West Coast Consortium and invited CTC faculty to attend an educator-focused virtual meeting. They were introduced to CEWD's free online interactive energy education program called <i>Energy Fundamentals 2.0</i>. Educators can use modules in current courses to enhance energy education.</li> <li>• Supported CoE Construction by co-sponsoring, partnering and participating in <i>Enlighten Women's Forum</i> at RTC.</li> <li>• Held EV in-person training at Clark College for CTC automotive, diesel and electrical technician faculty. Then shared other training opportunities throughout the year.</li> <li>• Attended RTC's Rivian inaugural event that introduced the program and company VIPs to Governor Inslee.</li> <li>• Introduced BTC to a potential hydrogen producer to support CTE training; and together, we toured labs at BTC and met the VPI and President.</li> <li>• Partnered with BBCC in hosting a first-of-its kind summit that showcased industry and BBCC programs.</li> <li>• Continued to build Energy Educators' Association ListServe and sent targeted emails throughout the year. Reaching more than 70 faculty and deans throughout the CTC system.</li> <li>• Created and hosted the first summer energy/STEM academy in SW WA to increase energy career awareness.</li> </ul>	
Core Expectations	<b>Activity #3: PROJECTS – CCW</b> <span style="float: right;"><b>CoE_Clean Energy</b></span>	
<input checked="" type="checkbox"/> Economic Development <input checked="" type="checkbox"/> Sector Strategy <input checked="" type="checkbox"/> Ed/Innovation/Efficiency <input checked="" type="checkbox"/> Supply/Demand <input checked="" type="checkbox"/> Equity & Access	<p><b>Career Connect WA: Clean Technology/Clean Energy Sector Lead</b></p> <ul style="list-style-type: none"> <li>• Continue to partner with CleanTech Alliance (CTA) as a sector co-lead. Work closely to:             <ul style="list-style-type: none"> <li>○ Identify emerging technologies and workforce gaps; share information with education partners.</li> <li>○ Share CCW opportunities to all partners; promote to encourage increased work-based learning projects.</li> <li>○ Support industry and education partners in building new work-based learning projects.</li> </ul> </li> <li>• Continue work as CCW Clean Energy/Technology Industry Intermediary and find pathways to connect CCW with opportunities brewing in industry.</li> </ul>	
Funding Sources %	Purpose	Projected Outcomes and Products

CCW funds extended through Dec. 31, 2023 95% CCW funds 5% CoE funds	Work-based learning projects will enhance knowledge and pathways into energy careers. It will encourage diversity, equity and inclusion participation with encouraged targeted programming.	~Attend CCW sector lead meetings and assist CTA with reports. ~Meet/support current and future CCW program builders. ~Continue to build/improve CoE's website design and function; add a CCW website page for industry. ~Promote projects through Energy Clips (newsletter) and social media outlets. ~Disseminate FWEE Activity Guides and attend Riverfest. Q2
Report and Analysis on Actual Outcomes and Products/Activity #3		CoE_CleanEnergy
Q1	<ul style="list-style-type: none"> <li>Career Connect WA funding was successfully extended to the end of 2023, which allows us to continue improving CoE's website, pay for travel to attend CEWD's annual convention (Q2 outside of WA DC), and purchase activities for future events.</li> <li>CCW hired a technical director. We meet with CCW staff three hours or more each month; and complete an online document for tracking successes.</li> <li>We hired the Trio Group to redesign pages and train the CoE's program coordinator, Emily Girt, to manage the website (big win). Emily is tracking/updating the overwhelming large amount of outdated pages and information. The website will have a new look by the end of the year.</li> <li>Through FWEE, we paid for and disseminated 1,000 updated activity guides to Salmon Fest, Riverfest, Mason County Fair, Lewis County Fair, and Libby Dam Visitor Center.</li> <li>Monica had high hopes to attend Riverfest in person, but opted out due to a lot of other travel. We need more material to use at this type of event and will choose to visit every other year.</li> <li>Energy Clips, the CoE's online news piece will begin Q2.</li> </ul>	
Q2	<ul style="list-style-type: none"> <li>The CoE will continue partnering CleanTech Alliance to represent <b>Career Connect Washington's Clean Technology Clean Energy Sector Leader</b>. Our contract was extended through June 30, 2025, which will support career connected learning projects and program development. The CoE is working with utilities to build more opportunities for our students as well as students in grades K-12. (CCW encourages more than three hours of meetings each month). <ul style="list-style-type: none"> <li>CleanTech Alliance hired a new workforce specialist, Benjamin Roldan, who we met with to discuss energy workforce needs and CCW deliverables.</li> </ul> </li> <li><b>Fusion Week.</b> Monica moderated a tremendous workforce panel consisting of a WSU Research Vice Chancellor, a WSU associate professor, a Livermore Lab Foundation executive, and Snohomish STEM ED. The audience was filled with educators, fusion CEOs and workforce supporters. We discussed opportunities to join the fusion workforce and how to enhance energy career awareness. Following the presentation, we dashed off to tour the Seattle area fusion companies.</li> </ul> <p><b>The Future of (Clean Energy) Work.</b> <i>The pace of technology is transforming at such an incredible speed that it will never be as slow as it is today.</i>  ~ Gary Dionne, Global Head People Data and Analytics at National Grid and keynote at CEWD's national summit.</p> <ul style="list-style-type: none"> <li>As mentioned in Activity #1, Monica attended <b>CEWD's national annual conference</b> and learned that high school students' knowledge of where energy comes from and what it is, is shrinking (national survey of high school seniors revealed that students know less about a unit measurement of electricity (Kilowatt hour), who their energy provider was and how electricity is made). Monica also networked with folks from a BioFuels Conference that occurred in the same conference hall as the CEWD conference. <ul style="list-style-type: none"> <li>Monica discussed an energy career handout for parents that's translated into Spanish, and will pursue this with CleanTech Alliance.</li> </ul> </li> <li>The CoE supported <b>King County's JumpStart program</b> that brings Seattle Central College's <i>Pre-apprenticeship Construction Training (PACT)</i> program, Seattle City Light's <i>Basic Electrical Applied Mathematics (BEAM)</i> program, King County's <i>Energize</i> and <i>YouthSource</i> programs</li> </ul>	

	<p>together to provide pre-apprenticeship training for solar and heat pump installation careers. The project aligns education with 240-hour work-based paid learning. <i>JumpStart</i> is in the final stages of the <i>Good Jobs Challenge</i> grant application. Our role includes event planning and promoting the project's successes.</p> <ul style="list-style-type: none"> <li>Wrote two CCW Program 12 support letters for: Avista's Craft Student Employment program; and continuation of Twin Transit's REVIT program.</li> </ul> <p><b>Avista Craft Student Employment Program</b> After two-years of design work, Avista developed a 9-month work-based learning program that immersed students into the utility's operations. Avista hired three students into the pilot's first year (2022-23). Students earned wages, gained work experience, and earned energy industry credentials while completing their high school diploma.</p> <p>The students worked 20-hour weeks while learning about tools, safety, time management and accountability. They were guided by mentors and experienced feedback on performance. Avista has an opportunity to expand its program to include more high school seniors; and is modeling a pathway that can be followed by other utilities across our state. Avista applied for Career Connect Washington Program 12 funding.</p> <ul style="list-style-type: none"> <li>Avista has created pathways for Craft Students to apply for entry level positions. One student enrolled in the first pilot project was recently hired.</li> <li>Six students were hired into the second year program, for 2023-24.</li> <li>Avista applied to be recognized by CCW as a Career Connect Launch, registered apprenticeship program.</li> </ul> <ul style="list-style-type: none"> <li><b>CoE's Website.</b> Emily Girt, the center's program coordinator, is leading the website's update efforts. She continued training, and with the help of the TRIO Group, added pages for internships, scholarships and a calendar of events. She will begin condensing and archiving outdated data that has been on the center's site for years.</li> <li>Included a CCW presentation in our Advisory Board meeting – to give more exposure to the programs and funding opportunities.</li> <li>Delivered a box of FWEE Activity guides to Lewis County PUD to disseminate during outreach efforts.</li> </ul> <p><b>**Attrition in our sector even effects our partnership with CleanTech Alliance, who hired a new specialist to continue work. Training time during this quarter will help.</b></p>
Q3	<ul style="list-style-type: none"> <li>Attended the first in-person <b>CCW leader and program builder convening</b> event in Spokane, WA. We met with all of the regional directors and followed-up with an electronic survey. A new sector strategy report will be implemented in Q4 to include hot jobs in the sector and work being done in each region. Monica and the other CoE directors expressed concern over the latest funding awards. CCW did not fund our best projects that included REVIT and AVISTA proposals (listed in Q2). <ul style="list-style-type: none"> <li>Emily has been working closely with CleanTech Alliance's Benjamin Roldan to complete drafts of the sector strategy report.</li> </ul> </li> <li><b>CoE's website.</b> Emily continued archiving pages; and updating news and events. She is working with the designer (TRIO Group) to re-build/re-design the college program pages.</li> <li><b>FWEE Activity Guides.</b> We continue to distribute activity guides at all meetings and conferences. These guides offer energy generation, transmission and distribution education -- all forms of energy generation including hydrogen; and serve to promote hydrogen and careers in energy.</li> </ul>
Q4	<ul style="list-style-type: none"> <li>Partnering with CleanTech Alliance, we submitted a <b>CCW Sector Lead Strategic Plan and Summary</b>, which included: <p><b>What are 3-5 to five themes employers are stating regarding workforce development?</b></p> <ul style="list-style-type: none"> <li><b>Engineers of all disciplines are needed.</b> Growth in our sector and laws requiring clean energy adoption will create dramatically increased demand. Smaller firms struggle to compete for talent because demand continues to raise salaries.</li> <li>Employers want a <b>diverse workforce</b> and need help reaching women and underrepresented groups. Employers repeatedly tell us that outreach must happen with grade school age students. By high school, girls and BIPOC students have already aligned with other career</li> </ul> </li> </ul>

	<p>paths. <b>Women and BIPOC students</b> are not maintaining STEM and engineer majors, though employers seek to hire them. Prep for STEM success, and additional slots at state universities should both occur.</p> <ul style="list-style-type: none"> <li>• <b>Technicians of all kinds will have growing demand</b> as new energy projects are sited and approved. These programs need equipment, aid with and pathways to enrollment, diversification, and support to manage the difficulty predicting exactly when projects will be ready and when students should be graduating.</li> <li>• <b>Rural areas</b> continue to face additional barriers to attracting talent.</li> </ul> <ul style="list-style-type: none"> <li>• CoE and CTA attended CCW leader and program builder convening events to build regional contacts and project opportunities. These contacts help support our regional outreach to make connections that are helpful to CTCs.</li> <li>• We voiced our concerns of two projects that weren't selected for continued funding (REVIT and Avista's 9-month craft program). Not funding those projects led to other industry partners shying away from creating similar programs and applying for CCW funds.</li> </ul>	
Summary	<p>Partnering with CleanTech Alliance in a Sector Leader role allows us to increase our outreach. We are able to split events and conferences that we attend and follow up with introductions of contacts. We continue to support industry that attempts to build new pathways in training and employment, such as Avista's 9-month craft program and Lewis County Transit-led REVIT program; and continue to pursue and support more opportunities.</p> <p>Findings:</p> <ul style="list-style-type: none"> <li>• Building new work-based learning opportunities is tough in an industry that has many apprenticeship programs that are full.</li> <li>• It takes time and education to build new work-based learning programs that fit into Career Launch category. Industry is requesting career awareness, which aligns with Career Explore and Career Prep; while CCW needs an increase in Career Launch programs.</li> <li>• Creating work-based learning opportunities for participants under the age of 18 is new to this industry.</li> <li>• Building new programs in this industry is also difficult because partners are challenged with meeting other initiatives, such as the <i>Clean Energy Transformation Act</i>, that takes precedents in management and budgets.</li> <li>• CCW became aware that their program selection process didn't meet their needs of supplying funds to high-demand programs. Two projects that were funded in one stage weren't funded for work to continue – which leads to awkward conversations with industry partners.</li> <li>• CTA experienced attrition during this year's work which created a delay in action items (new employees need time to learn and meet expectations).</li> </ul>	
Core Expectations	<b>Activity #4: PROJECTS - REVIT</b> <span style="float: right;"><b>CoE_CleanEnergy</b></span>	
<input type="checkbox"/> Economic Development <input checked="" type="checkbox"/> Sector Strategy <input checked="" type="checkbox"/> Ed/Innovation/Efficiency <input checked="" type="checkbox"/> Supply/Demand <input checked="" type="checkbox"/> Equity & Access	<p><b>Renewable Energy Vehicle &amp; Infrastructure Technician Training (REVIT)</b></p> <p>To increase enrollment in colleges that support a pathway to careers, the center will continue to partner with Twin Transit to support renewable energy training to students, grades 8 – 14. Two grants were secured in 2023 to build the first introduction to renewable energy training for high school students. Once the curriculum is approved and finished by fall of 2024, then the center will help promote and share this K-14 partnership model as well as curriculum to others around the state.</p> <ul style="list-style-type: none"> <li>• The center will:             <ul style="list-style-type: none"> <li>○ Continue grant application support.</li> <li>○ Convene between high school and college faculty and staff; host meetings and workshops.</li> <li>○ Promote successes and curriculum across the state.</li> </ul> </li> </ul>	
Funding Sources %	Purpose	Projected Outcomes and Products

CoE Allocation 90% CCW 10%	We need to prepare the future workforce as it approaches a world with evolving technologies. Industry needs technicians and an increasing rate. REVIT was created as a model that will be shared across the state to connect K-12 to college's that offer energy technician programs.	~Host meetings and training workshops (as needed). ~Promote successes and program opportunities in Energy Clips, on website and social media. ~Write support letters as needed to gain additional funding.
Report and Analysis on Actual Outcomes and Products/Activity #4		CoE_CleanEnergy
Q1	<ul style="list-style-type: none"> <li>Met with community stakeholders to partner in Twin Transit's Renewable Energy Vehicle and Infrastructure Technician (REVIT) training program. Coordinated meeting space at Centralia College for the group.</li> <li>Group consists of Twin Transit (lead), superintendents and CTE directors of Centralia and Chehalis School districts, representatives from Centralia College (ERA faculty), Career Connect WA regional representatives, ESD 113, CoE staff and Bonneville Environmental Foundation (BEF) staff.</li> <li>Twin Transit hired a program coordinator and curriculum building team (EduCurious).</li> <li>The first Clean Energy Exploratory program was launched at Centralia High School in September. 25 students enrolled (50% female). Students will earn high school credits in physics and CTE.</li> <li>Emily Girt, CoE Program Coordinator, attended two monthly REVIT meetings on behalf of the CoE.</li> </ul>	
Q2	<ul style="list-style-type: none"> <li><b>Renewable Energy exploratory class update.</b> Students have demonstrated several ah-ha moments; one of which involved the realization that energy is science which can be applied to daily examples. Chehalis's W.F. West is aligned to start the exploratory class in the fall.</li> <li><b>DACUM.</b> Jason Petrait led a 4-hour DACUM for renewable energy positions related to EV and hydrogen fueling stations. Twenty-two SME's included folks from California, Canada, Germany and India, where hydrogen technology is being deployed. The first draft of DACUM results will be presented in January. It was a fascinating process and all whom attended learned something new. The discussion included steps from developing a fueling station idea to constructing, operating and maintaining it. Skills, ranging from design to safety to pipefitting, were discussed. The CoE recruited many SMEs, and assisted with virtual meeting logistics.</li> </ul>	
Q3	<ul style="list-style-type: none"> <li><b>DACUM.</b> We finished the EV/H2 DACUM process and are looking for funding to create two to three dual credit classes (high school and college credit). Classes will focus on EV/Hydrogen Mobility Technician. Lewis County Transit has a great team and have submitted grant proposals to TransAlta and the WA Dept of Ecology to fund the curriculum.</li> <li><b>REVIT classes.</b> REVIT was offered at Centralia High School this year and will be offered at Centralia High School and WF West next fall. Centralia High School is creating an Energy Academy.</li> <li><b>REVIT promotion.</b> We shared news of REVIT's successes with Governor Inslee, during local Rotary presentations, and during presentations with OCED.</li> </ul>	
Q4	<p>REVIT teamwork focused on: Monitoring and making adjustments to the pilot class, planning curriculum for the dual-credit classes, and promoting the program. The CoE supported REVIT through a variety of talks and presentations, such as:</p> <ul style="list-style-type: none"> <li>Within the director's report during the CoE's spring advisory board meeting; at a workforce breakout session during CTA's Innovation Showcase; and during Renewable Hydrogen Alliance's Annual Conference.</li> <li>We also made presentations at Centralia College East and at the Clean Energy Technology Workforce Advisory Committee meeting and PNNL's hydrogen workforce meeting.</li> </ul>	

	<ul style="list-style-type: none"> <li>FYI: Lewis County Transit applied for funds to continue the dual-credit curriculum project. Funds will be used to pay Centralia College faculty to work on a curriculum team.</li> </ul>	
Summary	<p>The value of being involved with this team lies in the partnerships and students. Having students learn and make the connection between energy lessons and real-world applications is very rewarding. We continue to support this program because it's building a pathway from high school to college to careers. A great example: One Centralia High School student, out of 23 who took the pilot class, built a hydrogen fuel cell go-cart which led to him winning regional and statewide awards. He is in the process of building a hydrogen fuel cell tractor while working in an internship at Lewis County Transit. We're looking forward to seeing what he accomplishes next year, during his senior year in high school. We're also looking forward to the creation and launch of the dual credit hydrogen mobility technician classes. Future plans include packaging the programs and making them available to other schools and colleges throughout WA.</p>	
Core Expectations	Activity #5: PROJECTS – PSU NSF-REI	
<input checked="" type="checkbox"/> Economic Development <input checked="" type="checkbox"/> Sector Strategy <input checked="" type="checkbox"/> Ed/Innovation/Efficiency <input checked="" type="checkbox"/> Supply/Demand <input checked="" type="checkbox"/> Equity & Access	<p><b>The Pacific NW Smart Grid Technology Ecosystem: Creating prosperity through a smart, sustainable, and secure electric grid</b></p> <p>Portland State University (PSU) was awarded a \$1 million planning grant by the National Science Foundation (NSF) for a smart grid project, SEQUINS. The project is part of PSU's Directorate for Technology, Innovation and Partnerships, which is aspiring to change the way grant money is allocated so that it actually reaches and serves local communities. SEQUINS, which stands for Smart, EQUitable, INteroperable, and Secure, will coordinate major players in the Pacific Northwest to make a truly "smart" electrical grid a reality. Led by Portland State University. Partners include PNNL, Technology Association of Oregon, Portland General Electric, NW Energy Efficiency Alliance, LinkOregon, Oregon Titan Fusion Center, and State of Oregon Chief Information Security Officer.</p> <p>This two-year Regional Innovation Engine (RIE) planning grant will facilitate coordination between research, entrepreneurship, industry, capital, and government to scope a roadmap for an equitable smart grid across the Pacific Northwest. The project will identify obstacles to smart grid growth and develop plans to overcome them. Throughout the work, the focus will be on energy equity, so that everyone in the region, regardless of location and income, benefits from the investments and the job opportunities SEQUINS will create. If successful, the SEQUINS planning phase can result in up to \$160 million in NSF implementation funding for regional businesses, entrepreneurs, academic institutions, and others, with the ultimate goal of transforming the Pacific Northwest into a global smart grid leader.</p> <p><b>CoE's role is to serve on the project's advisory board and be a strategic partner.</b> The following includes the activities for the advisory board:</p> <ul style="list-style-type: none"> <li>Partner with PSU, Worksystems Inc, Heritage University, and NCAE-C to survey existing workforce development programs for best practices</li> <li>Build partnerships and convene key constituencies, including labor unions and tribal communities, to ensure impacted parties are represented.</li> <li>Develop a framework with culturally-specific organizations, industry, education, and other workforce partners for communicating the value of cybersecurity and smart grid jobs.</li> </ul>	
Funding Sources %	Purpose	Projected Outcomes and Products
CoE Allocation 100%	Build collaboration of partners within the region, survey existing smart grid and cybersecurity workforce programs, and assist region in workforce development planning.	<p>~Attend advisory board meetings (TBD) and support the region's smart grid/cybersecurity partnership.</p> <p>~Update this activity as this collaboration evolves (we have not met yet).</p>
Report and Analysis on Actual Outcomes and Products/Activity #5		CoE_CleanEnergy



Q1 & Q2	<ul style="list-style-type: none"> <li>• Attended Portland State University's NSF-EIN advising council meeting (Sept. 12) to meet fellow advisors and discuss the project's next steps. Shared previous work that the CoE_Clean Energy had done in Smart Grid technology – including Train the Trainer modules.</li> <li>• Participated in surveys; Most likely will move into workforce advising team.</li> <li>• Q2 – Not a lot of action occurred other than one or two additional meetings and polls.</li> </ul> <p>**Moving slower than anticipated; but grateful because we are busy.</p>	
Q3	This group has grown. PSU has added efforts from another PSU led project around battery storage that has a planning grant funded by the EDA Tech Hub. Workforce development workgroups are focusing on smart grid and battery technologies. These groups are utilizing the CoE's career pages and the older Smart Grid grant modules that were created in 2010.	
Q4	The group is continuing to plan, design and map out what a regional cohort and deliverables will look like. PSU merged two programs together to create battery storage and smart grid technologies. The name has changed to Powerise.	
Summary	This project is in a planning stage. The teams are using work that the CoE created in the past (Smart Grid grant) along with utilizing our website as a resource. We're making connections in Oregon and Washington through this group and will continue as long as we are able to add value to the project.	
Core Expectations	<b>Activity #6: <i>Enlighten Women's Forum</i> and <i>EmPower</i> Conference 2025 Planning</b> <span style="float: right;"><b>CoE_Clean Energy</b></span>	
<input type="checkbox"/> Economic Development <input checked="" type="checkbox"/> Sector Strategy <input checked="" type="checkbox"/> Ed/Innovation/Efficiency <input type="checkbox"/> Supply/Demand <input checked="" type="checkbox"/> Equity & Access	<p>First biennial <i>Enlighten Women's Forum</i> (<i>EmPower</i> Conference biennial offset) focused on career planning and certifications for the construction industry. Plan and deliver an in-person conference that supports women in the trades and builds future leadership in a diversity of trades including manufacturing, construction, and maritime. Conference topics may include:</p> <ul style="list-style-type: none"> <li>• Jobsite safety;</li> <li>• Wellness and nutrition;</li> <li>• Education pathways, certification &amp; credentialing;</li> <li>• Technology, new career pathways, and career planning;</li> <li>• Diversity, equity &amp; inclusion.</li> </ul> <p>The EMPOWER Women's Leadership Conference provides a platform for the Centers of Excellence for Aerospace and Advanced Manufacturing, Construction, Clean Energy, and Marine Manufacturing &amp; Technology to continue supporting women from diverse communities as they consider careers and advancement in the trades.</p> <ul style="list-style-type: none"> <li>• Enlighten Forum is tentatively scheduled for: <b>March 21, 2024</b>, at Renton Technical College</li> <li>• <i>EmPower Conference</i> is tentatively scheduled for: <b>March 6, 2025</b>. Location TBD - planning bid process with advisory team.</li> </ul>	
Funding Sources %	Purpose	Projected Outcomes and Products

COEs allocation = 30% Industry Sponsors = 65% RTC = 5%	<p>Provide multiple access points for women who are currently in the trades, with high quality, timely and relevant professional development opportunities focused on career advancement and longevity.</p> <p>The symposium and conference will offer a platform for women who are considering a career, promotion, and further education in the trades, providing critical information about pathways, training options, finding a mentor, and more.</p> <p>In response to a desire for more content from previous conference attendees, the Centers will offer post-conference professional development opportunities, which led to the creation of <i>Enlighten</i>.</p>	<ul style="list-style-type: none"> <li>Assist the Construction CoE with planning and participating in the <i>Enlighten Women's Forum</i> in March 2024.</li> <li>Assist the centers and advisory team in planning the EmPower Conference, scheduled for March of 2025.</li> <li>Share professional development opportunities, recordings, slides, and other relevant resources and materials.</li> </ul>
Report and Analysis on Actual Outcomes and Products/Activity #6		CoE_CleanEnergy
Q1	<ul style="list-style-type: none"> <li>Met several times with Christina Rupp, including a meeting with the marketing firm to approve the event logo.</li> <li>Christina and I met with Daniel Vallao, co-founder of intelligent Partnerships. Daniel came highly recommended by Rachel Ferrell Crowley, Central WA director for Senator Patty Murray (we discussed the Enlighten event at the AGI Summit)</li> <li>Discussed the summit with Christina Reid, IBEW Local 77 and Alice Massara of Tacoma Power – who are both reaching out to their communities for speakers and session leaders.</li> </ul>	
Q2	<ul style="list-style-type: none"> <li>Planning committee toured RTC to view logistics layout; and the team met to discuss presenters, panels, breakout sessions and keynote speaker. Christina is doing most of the work – from final design work to organizing the committee. She secured our keynote speaker. CoE_Clean Energy will recruit and moderate a new technology panel, will assist with marketing and recruiting attendees, and is helping with sponsorship.</li> </ul>	
Q3	<ul style="list-style-type: none"> <li>A very powerful and well-organized event, <i>Enlighten</i> welcomed over 300 women working in construction and energy trades/crafts. Christina Rupp, Construction CoE, led a very robust team of planners, speakers and sponsors. Our energy partners weren't able to sponsor this year; due to budget constraints and sponsorship policies (however, Tacoma Power re-wrote their sponsorship policies because of this event). We pulled together some amazing presenters from Tacoma Power, IBEW Local 77, Renewable Hydrogen Alliance, CleanTech Alliance, Avalanche Energy and Smart Buildings, Inc. Avista (Spokane) and Tacoma Power sent employees. Most attendees were from construction (other energy folks didn't identify themselves). Good takeaways for the guests – they discovered new career pathways into energy and learned about fusion as a new sub-sector in our state. We made a great connection between ANEW students and internship openings at Avalanche Energy (fusion).</li> <li>Monica assisted with set-up the day before and day of the event; and welcomed guests, took photos and monitored the main stage speaker lineup. We also wrote and shared emails and social media posts to support the event.</li> </ul>	
Q4	No activity this quarter for this CoE. The planning team held a debriefing meeting during a time that weren't able to attend.	
Summary	Enlighten was a fun event that provided an opportunity for us to share information about careers in energy (attendees expressed that they didn't realize there were opportunities within this industry). Highlights included: Our IBEW-77 advisory board member attended and made some great connections; attendees in construction careers realized they possess skills to work in both industries; our fusion partner shared	

	<p>internship opportunities and interviewed ppl at the event; and the CoE gained a little exposure. The planning team led by Christina Rupp is well established and they organized a fantastic event.</p> <ul style="list-style-type: none"> <li>• Monica attended planning meetings, visited the venue, gathered and managed a team of presenters, sought additional sponsors (unsuccessful this time), and assisted with set up and presenter monitoring during the event.</li> <li>• Focus this year was on <i>Enlighten</i>. No work on EmPower 2025 (mentioned in outcomes).</li> <li>• Due to an increased volume of upcoming projects, we won't have the available time to participate in <i>Enlighten</i> or <i>Empower</i> as heavily as we did this year.</li> </ul>	
<b>Core Expectations</b>	<b>Activity #7: CHMURA</b>	<b>CoE_CleanEnergy</b>
<input checked="" type="checkbox"/> Economic Development <input checked="" type="checkbox"/> Sector Strategy <input checked="" type="checkbox"/> Ed/Innovation/Efficiency <input checked="" type="checkbox"/> Supply/Demand <input checked="" type="checkbox"/> Equity & Access	<p><b>Chmura Data</b></p> <p>The Workforce Data Pilot will identify, extract, format and deliver workforce and related data, using the Chmura JobsEQ RTI platform. This project will demonstrate the use and effectiveness of occupational, industry and other data to the workforce education and training system. Eleven Centers of Excellence are participating in the Phase II Pilot and will fully engage in the continuation of the collection of data, work with the RTI Jobs Positing tool, develop a community of practice and information dissemination process. Intended completion for pilot: Spring 2024</p>	
<b>Funding Sources %</b>	<b>Purpose</b>	<b>Projected Outcomes and Products</b>
CoE Allocation 100%	The Workforce Data Pilot Project will collect, map, and produce industry demand, workforce and economic impact data, professional technical occupations, utilizing the Chmura JobsEQ RTI proprietary workforce and economic management tools to inform and benefit CTC workforce programs. The project will also utilize the RTI Jobs Posting tool.	<p>~Professional development for CoE staff.</p> <p>~Expansion to include incorporation of Jobs EQ Job Postings tool – engage with Chmura regarding how to publish or use on coewa.com site and possibly all COE sites.</p> <p>~Join other CoE's in creating Community of Practice. Q2/Q3</p>
<b>Report and Analysis on Actual Outcomes and Products/Activity #7</b>		<b>CoE_CleanEnergy</b>
<b>Q1 &amp; Q2</b>	<p>Ann Avary, CoE_Marine, is leading this activity.</p> <ul style="list-style-type: none"> <li>• We continue to use Chmura to share information with colleges – regarding clean energy jobs as well as demographics. This tool is amazing and extremely helpful.</li> <li>• Located and used a tool within Chmura's RTI section that pulls all job announcements that contain "hydrogen" and other new technology buzz words that don't have any job codes. This is very helpful in reviewing job requirements of entry level jobs to share with other CTC partners.</li> <li>• Will be one of four CoEs to present Chmura webinar #2 in Q3.</li> </ul> <p><b>**Chmura continues to be a great tool – especially in areas that don't have CIP codes, such as fusion and hydrogen. We use RTI to find job descriptions that outline skills and education for these new rules.</b></p>	
<b>Q3</b>	<ul style="list-style-type: none"> <li>• Monica joined Ann, Brianna, Lindsey and Sam to present Chmura to CTC system attendees. Ann raved that we all did a terrific job – as we each presented a different way of using Chmura.</li> <li>• Several CoE directors presented during Winter WEC, and I followed up with deans who had questions.</li> <li>• Chmura JobsConnector was added to the CoEWA's landing page (thanks to Ann and Jason Petrait): <a href="https://www.coewa.com/">https://www.coewa.com/</a></li> </ul>	

	<ul style="list-style-type: none"> <li>Reports were requested by Centralia College, Columbia Basin College and Shoreline; as well as Lewis County Transit, Snohomish STEM, Tacoma Power, and WA Dept of Commerce (for grant proposals).</li> </ul>	
<b>Q4</b>	<ul style="list-style-type: none"> <li>Requests for labor market material decreased. We are exploring ways to add data onto a website dashboard.</li> </ul>	
<b>Summary</b>	Chmura is a wonderful tool to track labor market information and careers within this industry. We utilize the RTI tool to find job descriptions to track skills needed in emerging technologies, such as hydrogen and fusion, that aren't included in CIP or SOC codes. We are exploring ways to incorporate the data into a dashboard on our website (2024-25).	
<b>Core Expectations</b>	<b>Activity #8 – AWARENESS</b> <span style="float: right;"><b>CoE_CleanEnergy</b></span>	
<input checked="" type="checkbox"/> Economic Development <input checked="" type="checkbox"/> Sector Strategy <input checked="" type="checkbox"/> Ed/Innovation/Efficiency <input checked="" type="checkbox"/> Supply/Demand <input checked="" type="checkbox"/> Equity & Access	<b>Increase Awareness of Clean Energy/Clean Technology Careers and Career Pathways</b> A blend of activities: strengthening advocacy, community partnerships and education along with efforts to increase and build awareness. This new activity showcases work that increases awareness in emerging technologies and workforce needs, to include. <ul style="list-style-type: none"> <li>Workforce training inclusion in hydrogen, fusion and other emerging fields</li> </ul>	
<b>Funding Sources %</b>	<b>Purpose</b>	<b>Projected Outcomes and Products</b>
CoE Allocation 90% CCW 10%	Building awareness of the center and as well as industry news and trends is vital to building new connections and supporting the energy industry. As new technologies begin to emerge, it's important to be a voice for workforce and the CTC system.	~Present CoE information to two organizations unaware of CoE. ~Attend at least two events that are not industry focused that offer opportunities to increase networking contacts. ~Promote Public Power Week and Careers in Energy Week to increase career awareness Q2. ~Build CoE CleanEnergy News Clips awareness/readership through social media posts. ~Print energy career fliers for event dissemination.
<b>Report and Analysis on Actual Outcomes and Products/Activity #8</b> <span style="float: right;"><b>CoE_CleanEnergy</b></span>		
<b>Q1</b>	<ul style="list-style-type: none"> <li>Presented CTC information and supported IBEW-Local 77's efforts in creating a CyberOT apprenticeship program at WPUDA (Washington PUD Association) in the Tri Cities. Disseminated skill gaps analysis, CoE FAQ sheet and new FWEE activity guide.</li> <li>Presented WA state's climate/clean energy initiatives and workforce development issues to Centralia's Sertoma Club (local).</li> <li>Attended Green Transportation Expo and Renewable Hydrogen Summit to increase networking contacts.</li> </ul>	
<b>Q2</b>	<ul style="list-style-type: none"> <li><b>Careers in Energy Week.</b> We promoted careers in energy virtually during Careers in Energy Week. Used/shared/enhanced CEWD's social media creative; and are developing plans to promote increased activities next year as dam tours begin to re-open (met with Tacoma Power's new outreach educator).</li> <li><b>Economic Alliance Expo.</b> Monica participated on the Future of Energy panel. Sat with Bob Russel, Richard DeBolt, Michelle Dewilter and former auditor Diane Dorey and shared how businesses can help colleges with relevant equipment and adjunct faculty needs.</li> </ul>	

	<ul style="list-style-type: none"> <li>• <b>Governor Inslee.</b> Christina Rupp invited Genevieve and Monica to attend an apprenticeship meeting with Governor Inslee at Renton Technical College. RTC unveiled its Rivian Electric Vehicle lab. RTC is one of only three sites in the country to partner with Rivian to train employees. The five-month program includes paid on-the-job training and the opportunity to work at a Rivian shop upon completion of the curriculum. The first course is tentatively set to begin Dec. 18. Monica delivered an updated FAQ and shared information on projects that are building a pipeline into the energy workforce.</li> </ul>
Q3	<ul style="list-style-type: none"> <li>• We shared news and event photos on social media – LinkedIn and Facebook.</li> <li>• We were interviewed and included in a publication by the National Skills Coalition; in social media posts by Gov. Inslee’s office (see below); and in an article by an AP reporter based in Philadelphia.</li> <li>• <b>Presentations.</b> Local Rotary, Dept of Energy/OCED and PNWH2 participants attended a Community Benefits Plan meeting at Centralia College (March 25). The meeting was followed by an hour presentation of the CoE and the work we are doing to support hydrogen and workforce development.</li> <li>• The Center and Centralia College hosted <b>Governor Jay Inslee and First Spouse Trudi</b> in January. The focus of the visit was to showcase the work that we’re doing in the clean energy sector. Our presentation included comments from Avista, Centralia School District, IBEW Local 77, Lewis County Transit, and Tacoma Power. We were encouraged to invite up to 12 guests, which included Centralia College Board of Trustee members, Dr Bob Mohrbacher, Connie Smejkal and Aman Gill. Others included Lorie Thompson, ESD 113/Capital STEM network, Ilene Munk, WTC’s Clean Energy Technology Workforce Policy Manager. At the end of the presentation, we all boarded an electric bus and rode to the transfer station, where Governor Inslee learned about the WAVE induction charging system. Articles of his visit were included in the local paper as well as on Governor Inslee’s social media accounts. A video was produced as well.</li> </ul>
Q4	<ul style="list-style-type: none"> <li>• Monica was interviewed by Alexa St John, AP reporter who wrote a clean energy workforce article that appeared here in AgriNews - <a href="https://www.agrinews-pubs.com/community-colleges-offer-clean-energy-training-as-climate-related-jobs-expand-across-america">Community colleges offer clean-energy training as climate-related jobs expand across America – AgriNews (agrinews-pubs.com)</a></li> <li>• <b>Presentations:</b> Renewable Hydrogen Alliance annual conference; partnered with Lewis County Transit during a climate series hosted by Centralia College East, NREL’s WG8 (work group 8/hydropower) and INTENT Energy in Spokane.</li> <li>• <b>Meeting Hosts:</b> The Center and Centralia College hosted PNNL, Dept of Commerce and Dept of Energy HFTO office to discuss hydrogen curriculum.</li> </ul>
Summary	<p>We continued to build relationships and awareness within existing and emerging industries, CTC deans and educators, and additional communities, such as various departments within the U.S. Dept of Energy and the WA State Dept of Commerce. We experienced an increase in invitations to participate on committees, in Think Tanks, on event panels, and in grant proposals. Awareness has increased throughout the region through presentations and networking. In addition to speaking on panels, Monica moderated panels (during <i>Enlighten Women’s Forum</i> and <i>Fusion Week</i>) and emceed two events (BBCC’s <i>Building the Future Energy Workforce</i> and RHA’s annual conference).</p> <p>We presented information to the Washington Public Utility District Association (WPUDA), to Lewis County school district superintendents; and during public forums such as the Economic Alliance Expo, Economic Alliance of Lewis County’s Clean Energy Forum, CleanTech Alliance’s Fusion Week and Innovation Showcase, Center for Hydrogen Safety’s America Conference; and have various opportunities to share work within the PNWH2 Hub, Career Connect WA and Capital STEM Alliance.</p> <p>To support our work, we updated the CoE logo (slightly) and continue to make improvements on the website, which is a living resource. The website management was brought in-house and is managed by CoE program coordinator, Emily Girt. This move allows us to be more efficient and have quicker response time. Additional pages and resources have been added, such as K-12 activities, Career Connect WA, internships, scholarships and apprenticeships pages. Emily continues to archive old pages and old information; and update pages that still hold relevance to our work. Next step is to increase awareness through regular (vs sporadic) social media posts.</p> <ul style="list-style-type: none"> <li>• PSU’s NSF Engine grant, now called <i>Powerise</i>, uses the CoE’s career pathway webpages and former <i>Smart Grid</i> information from our website as a resource to support their work.</li> </ul>

We weren't successful at maintaining a quarterly newsletter (sent two), which will be changed this year. Targeted emails to our Energy Educators' Association ListServe continued to update educators on training, job descriptions, and CoE news.

Finally, there is some confusion between agencies. Washington Training and Education Coordinating Board hosts a Clean Energy Technology Workforce Policy Manager, Ilene Munk, who leads the Clean Energy Technology Workforce Advising Committee the Washington (CETWAC); while the WA Dept of Energy added a Senior Energy Policy Specialist, Stephanie Scott, as the specialist leading the clean energy workforce in the Energy Policy Office. CleanTech Alliance would also like to enter the workforce world. We meet monthly as a group to share information. The CETWAC project will dissolve if voters pass the Climate Commitment Act (fall ballot).

## **BOARDS & COMMITTEES:**

**Capital STEM Alliance** – Executive Committee/Board member

**Career Connect Washington Clean Energy/Clean Technology** – Sector co-leader with CleanTech Alliance as lead partner

**Center for Energy Workforce Development (CEWD)** – Vice chair of West Coast CEWD Coalition

**Center of Excellence for Clean Energy //Energy Educators' Association** – Coordinator

**Center for Hydrogen Safety** – member

- **Global Hydrogen Workforce Development Taskforce** (international, led by Center for Hydrogen Safety) – Co-chair with San Juan College School of Energy

**CleanTech Alliance** – Board of Directors; and member

**Foundation for Water and Energy Education (FWEE)** – committee member

**INTENT – NSF Engines Grant/Spokane** – committee member

**Lewis County Renewable Task Force (biofuels)**– committee member

**Pacific Northwest Hydrogen Association (PNWH2)** - advising committee; representative for Centralia College as a hub partner

**Portland State University NSF-RIE/Powerise** (formerly SEQUINS) – Advisory Board member

**Shoreline CC Energy Program** – advisory board member



## **Acronyms**

AFV-TAG – Alternative Fuels & Vehicles – Technical Assistance Group (joint program of the WA Dept of Commerce and WSU Green Transportation program)

CETWAC - Clean Energy Technology Workforce Advising Committee (statewide outreach)

CEWD – Center for Energy Workforce Development (national outreach)

CoE – Center of Excellence

CoE\_Clean Energy – Center of Excellence for Clean Energy

CTA – CleanTech Alliance (regional outreach)

Dept. of Energy – U.S. Department of Energy

FWEE – Foundation for Water and Energy Education (statewide outreach)

NREL – National Renewable Energy Labs (national outreach)

RHA – Renewable Hydrogen Alliance (regional outreach)

PNNL – Pacific Northwest National Labs (national outreach)

PNWH2 – Pacific Northwest Hydrogen Hub Association (regional outreach)

PSU – Portland State University (Oregon)