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Clean Technology and Energy Sector

Summary of key themes, needs, and opportunities: June 2025

Prepared by the CleanTech Alliance, in partnership with the Pacific NW Center of Excellence for Clean Energy

(1) What are the top 3-5 themes you hear from employers in your sector related to workforce development?

- **Engineers of all disciplines are needed**. 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; all sector employers struggle to attract IT and cybersecurity workers due to high salaries in our region.
- Attrition, driven by anticipated retirements, will also create workforce gaps as employers work to maintain a skilled and adaptable workforce.
- **Greater awareness among young adults (esp. BIPOC young adults) about career opportunities in clean technology and clean energy.** Employers want a **diverse workforce** 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 paths. **Women and BIPOC students** 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.
- **Technicians of all kinds will have growing demand** 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.
- **Rural areas** continue to face additional barriers to attracting talent.

(2a) What are the 3-6 occupations that employers in your sector indicate should be high-priority for workforce development to help meet their hiring needs?

- Engineer (all disciplines) (SOC 17-2000)
- Electrician (SOC 47-2110)
- Technicians (SOC 49-2095)
  - HVAC Technician (SOC 49-9020)
  - Electric Vehicle (EV) Technician (SOC 49-2096)
  - Solar Photovoltaic Technician/Installer (SOC 47-2231)

(2b) Which career connected learning programs are effectively meeting the hiring needs of employers in your sector?

- Various **CTC and university** programs across all occupations
- **Labor/unions** including IBEW 77, JATC
- **Avista High School Craft Program** (students are exposed to a broad range of disciplines and trades with an opportunity to apply for entry-level jobs upon graduation) **- East**
- **Renewable Energy Vehicle & Infrastructure Technician (REVIT) Training:** Training for diesel-to-hydrogen mechanics, commercial/multi-unit residence heat & water systems, EV mechanics. HS class with credit in physics and CTE, creating the pathway into hiring needs. This program is a career prep program that will lead to a career launch program - **Capital**
- **SnoSTEM** (FWEE Summer Academy 2025) - **Northwest**

(2c) Which career connected learning programs could be adjusted, expanded, or scaled to other regions to meet the hiring needs of employers in your sector?

- Expand **engineering capacity** at state universities.
- **Add EV to existing automotive programs**: Integrating clean technology/energy into existing education programs and development pathways can be done in programs such as Automotive Technology at the CTC level with instructor training and integration of EV/hybrid and hydrogen fuel cell technology curriculum into existing classes or as classes within the program.
- **Expanded Registered Apprenticeship**: House bill 2082, which recently passed, will assess the needs of the electrical transmission industry and its workforce. A study will be led and published by the WA state Dept of Commerce (expected in Fall 2025), and RA programs should be expanded based on those findings.
- Expand the **Avista High School Craft Program**
- Expand **Renewable Energy Vehicle & Infrastructure Technician (REVIT) Training**
- **JumpStart (WJI):** Effective grassroots effort to diversify local technician and electrician workforce; this model would benefit from increased funding and geographic expansion.

(2d) Which career connected learning programs should be developed to meet the hiring needs of employers in your sector?

- A broad and multi-disciplinary **technician program at 2-year colleges** to prepare workers for hydrogen, fusion, battery factory, SAF production, offshore wind manufacturing, and other emerging energy fields
- **Career awareness** programs – attracting students and diversity to energy careers, focused on 4th-6th grade. The November 2024 CEWD conference included information on a national push to add Energy as a 17th Career Cluster, a huge step to getting more visibility for this sector. Our state should adopt the career cluster as well. Programs such as FWEE's STEM Summer Academy connect students to those working in the field, as well as to the rewarding careers available. These summer academies are expanding to different areas of the state.
- More **STEM prep programs focused on BIPOC, rural, and historically underserved youth**– with particular focus on preparing students to pass freshman chemistry.
- Upskilling and reskilling for existing **vehicle technicians** to transition in the current workforce as EV's become more widely adopted

(3) What are the top three efforts, initiatives, or investments that could meaningfully support the workforce development needs of employers in your sector?

- **Build awareness among employers** about career connected learning opportunities and support them with technical assistance to select the program that best fits their talent needs (e.g., Career Explore, Prep, Launch). As sector leader, we are tackling this through the launch of our workforce committee to partner with employer members at the CleanTech Alliance and leveraging the PNW CoE for Clean Energy Utility Advisory Board. This is our top strategy for 2025-2027. We can't expect employers to participate in programs they don't know about or in programs that aren't a fit for their talent strategies.
- **Scale promising programs** through CCW grant funds or other funding opportunities. These include JumpStart King County, Climate Corps programs, ReVIT, and FWEE
- **Develop cross-sector career exploration** focused on middle school students to help students understand the breadth of industries and occupations to help them make informed choices about programs to pursue in later grades
- **Encourage and mandate stronger connections and alignment across state agencies** to leverage joint funding and initiatives – there is significant initiative fatigue when the same

stakeholders and employers sit in very similar workgroups all trying to tackle the same problem. This can result in burnout and can diminish future interest to participate in state-led / supported initiatives.

(4) What are the top 3-5 approaches you recommend to increase participation of underrepresented students in your sector's high priority occupations?

The Clean Technology and Clean Energy sector faces similar challenges to many high priority sectors in our state to increase participation of students in high priority occupations. Fundamentally, this comes down to: building awareness among students at early grades *across* industries so that students can make informed decisions about Career Prep and Launch opportunities, ensuring there are programs in areas where BIPOC students comprise a significant proportion of the student body for skill development and on-the-job training, and partnering with employers to create a supportive work environment.

More specific recommendations:

- To increase participation of BIPOC students in the clean technology/energy sector, we need to create more programs centered on **creating awareness** of the jobs emerging from the transition to clean energy. This engagement needs to happen as early as **3rd grade** and can include having curriculum that aligns with these careers, taking students on tours to companies, and having speakers come to their classroom to present about their jobs and career path.
- Ensuring trusted messengers (e.g., mentors, teachers, counselors, youth leaders within CBOs, etc.) are equipped with information about clean technology and energy (as well as the other 9 sectors that CCW supports directly)
- Attracting diverse faculty to teach K12 and CTC students
- Additional recommendations and insights for program builders can be found in this report from the National Alliance for Partnerships in Equity
- As students enter **6-8th grade**, students and their families will need **information about pathways** and what classes they will need to take to enter these careers. Making information available throughout middle and high school will be the best way to prepare students for graduation and moving into the workforce or post-secondary programs.
- Leverage our **34 CTC's** to prepare under-represented students for success in **STEM fields**, leaning into their smaller class sizes, focus on hands-on experiential learning, and more rural accessibility.
- Encourage **employers and research universities** to *partner* with CTC's – focusing on funding and enabling them to do their work.