



# **Western HVAC Performance Alliance WE&T Comparable Training Working Group Recommendations to Inform Comparable Training**

A WHPA Work Product as of January 18, 2017

**Prepared by:**

WE&T Comparable Training Working Group

Working Group Chair, Pepper Hunziker (Principal, Tre'Laine Associates)

# **WE&T Comparable Training Working Group Recommendations to Inform Comparable Training**

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## **WHPA**

The Western HVAC Performance Alliance (WHPA) was founded in 2009 as a response to a directive in California's Long Term Energy Efficiency Strategic Plan (CLTEESP) to require greater collaboration among the CPUC, CEC, IOUs, and industry stakeholders to transform the HVAC market. The WHPA currently has 260 member organizations and 309 registrants that include HVAC residential and non-residential contractors, trainers, energy efficiency program consultants, manufacturers, contractor associations, distributors, certifying bodies, research organizations, IOUs, POUs, and government.

The CLTEESP sets four goals for the HVAC sector. They are:

1. **Goal 1:** Consistent and effective compliance, enforcement, and verification of applicable building and appliance standards.
2. **Goal 2:** Quality HVAC installation and maintenance becomes the norm. The marketplace understands and values the performance benefits of quality installation and maintenance.
3. **Goal 3:** Building industry design and construction practices that fully integrate building performance to reduce cooling and heating loads.
4. **Goal 4:** Develop new hot/dry climate HVAC technologies (equipment and controls, including system diagnostics) and greatly accelerate their marketplace penetration.

## **WE&T Committee**

Much of the significant and detailed work of the WHPA is accomplished through its subject matter-focused Committees as well as functional Working Groups aligned with the CLTEESP. The WE&T is a committee that was created to act as a steering committee for the IOUs' development of an HVAC Sector Strategy as mandated by the CPUC in D.12-05-015. Specifically, the current conception of the Commercial HVAC Sector Strategy partially addresses the following CLTEESP Strategies:

1. **HVAC Strategy 2-3:** Develop and provide expanded QI/QM training for contractors, technicians and sales agents.
2. **WE&T Strategy 1-2:** Support the community college and adult education efforts to support students to develop their education based on visible career paths in energy efficiency and related fields.
3. **WE&T Strategy 1-3:** Incorporate energy efficiency and demand-side energy management into traditional contractor and technician training, such as for plumbers and electricians, and expand training resources to produce target numbers of trained workers.
4. **WE&T Strategy 1-4:** Create or expand college and university programs with energy efficiency focus and foster green campus efforts to apply this knowledge in clear view of students and faculty.

## **WE&T Committee Chairs**

Jake Huttner, Southern California Edison  
Barbara Hernesman, SynergyNexGen

## **Comparable Training Working Group Chair**

Pepper Hunziker, Tre'Laine Associates

# WE&T Comparable Training Working Group Recommendations to Inform Comparable Training



## WE&T Committee Members

- Steve Auld, Ferguson Enterprises/AirCold Supply Division
- Bill Brown, Brownson Technical Center\*
- Jim Caldwell, CCCCCO
- Chris Compton, HVACRedu.net\*
- Susan Davison, CalCERTS, Inc.
- Susie Evans, IHACI\*
- Gary Fagilde, PG&E\*\*
- Barbara Hernesman, SynergyNexGen
- Pepper Hunziker, Tre' Laine Associates\*
- Jake Huttner, SCE\*
- Gary D. Johnson, SoCalGas
- Daniel Jones, Pelican Wireless\*
- Rick Larkey, NSBIF
- Warren Lupson, Lupson & Associates\*
- Garrett McGuire, AHRI\*
- Tim Muckey, El Camino College\*
- Bonnie Moreno, SDG&E
- Bruce Noble, Rio Hondo Community College
- Len Pettis, Irvine Valley College
- Jeremy Reefer, SDG&E\*
- Dennis J. Quinn, Joule Assets
- Mike Ray, Lennox Industries
- Jeremy Reefer, SDG&E
- Carlos Santamaria, CEES-Advisors
- Charles Segerstrom, SDG&E Commercial HVAC Consultant\*
- Eugene Silberstein, HVAC Excellence
- Scott Stroh, PipeTrades Training Center Northern California
- Gary Shushnar, SCE
- Don Tanaka, United Association\*
- Howard Weiss, HVAC Excellence\*
- Jerry Weiss, HVAC Excellence\*
- Chuck White, PHCC

\*Comparable Training Working Group Voting Members

\*\*Comparable Training Working Group Non-Voting Member

## WHPA Staff

Ellen Steiner, Opinion Dynamics

Bonnie Gustavson, BJGustavson Consulting

## Document Background

The IOUs requested that the WHPA WE&T Committee provide further definition to the term “comparable training” used in the Don Vial Center Report (DVC Report): *Workforce Issues and Energy Efficiency Programs: A Plan for California’s Utilities* released in May of 2014.<sup>1</sup> The DVC Report uses the term “comparable training” in their labor demand strategies for energy savings which states:

- B. Adopt specific skills certification requirements in conjunction with quality assessment activities (see Exhibit 2.2 Decision Tree) for contractors and technicians working on ratepayer-subsidized EE projects.
  3. HVAC *Quality Installation and Quality Maintenance*: Require graduation from a state-certified apprenticeship program, a 2-year degree in HVAC, or proof of comparable training and experience for jobsite HVAC technicians.<sup>2</sup>

The WHPA WE&T Committee formed the Comparable Training Working Group (the Working Group) to work on this goal. This document codifies the findings of the Working Group.

<sup>1</sup> <http://laborcenter.berkeley.edu/workforce-issues-and-energy-efficiency-programs-a-plan-for-californias-utilities/>

<sup>2</sup> *ibid.*

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## Findings of the Comparable Training Working Group

Upon critical examination and discussion of the aforementioned statement from the DVC Report, the WHPA Comparable Training Working Group has concluded that it is unable to provide a definition for the term “comparable training” as referenced in the Report. The biggest challenge in defining “comparable training” is that the DVC Report suggests, in the recommendation noted above, that graduation from a state-certified apprenticeship program and a 2-year degree in HVAC are comparable. However, the Working Group does not agree that these credentials are comparable but instead believes that these two credentials are part of a larger complex HVAC career lattice. Thus, without understanding the objective criteria used to compare apprenticeship graduation and a 2-year degree in HVAC, it is challenging to align comparable training with these two credentials.

However, the group recognizes that contractors and technicians participating in IOU HVAC programs must possess the right knowledge, skills and abilities in the field to ensure successful program outcomes. The group also recognizes that program participation requirements can be perceived as a barrier for the workforce to engage in IOU energy efficiency programs. The group also noted that through workforce education and training efforts, scaffolds can be put into place that aid the workforce in up-leveling to meet these requirements and support ongoing learning and development opportunities. The Working Group identified a number of industry studies and policy documentation (listed at the end of this document) as germane to understanding the complexity that exists in IOU HVAC programs and the relationship with WE&T efforts.

Through careful examination of these documents and in conjunction with generally accepted Career Technical Education best practices, this group offers an alternative option that seeks to address both the requirements for program eligibility and program participation.

## Recommendations

For program eligibility, the Comparable Training Working Group recommends leveraging the framework currently used in the SCE HVAC Optimization Program (see Appendix A). As QM and QI programs evolve and new programs are designed, the contents within the framework can be modified to reflect the relevant and applicable industry-recognized credentials and knowledge, skills and abilities (KSAs), as well as qualifications based upon the respective program’s performance metrics. Suggested framework components include the following:

1. Variety of levels of participation capacity and capability (i.e. SCE CQM levels 1 and 2);
2. Experience: A minimum of five (5) years Heating, Ventilation & Air Conditioning service experience;
3. Licenses: Health/Safety/Professional/etc. (i.e. Refrigerant Transition and Recovery Certification; Type II or Universal, as required by 40 CFR Part 82, Subpart F of Section 608 of the Clean Air Act of 1990. Valid 608 technician certifications must be issued under a Program approved by the U.S. Environmental Protection Agency.);
4. Credentials/Certifications: Hold scope-appropriate certification from recognized industry certification bodies; and
5. Participant commitment to ongoing industry learning and development opportunities

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In addition, the Working Group, recommends including the following:

- Include an Employer Support component to program participation requirements, reference examples in the WHPA Employer Support Working Group report.  
(<http://www.performancealliance.org/Portals/4/Documents/Work%20Product/Recommendations%20to%20Operationalize%20Employer%20Support.pdf>)
- For program participation: provide targeted training that aligns directly with specific program’s performance metrics.
  - The performance metrics informs the technical performance and evaluation criteria. This is built into the program design.
  - The performance and evaluation criteria inform the curriculum for the technical training.
  - The performance and evaluation criteria serve as the rubric to show proof of competency and capability of:
    - Theoretical understanding via a knowledge assessment.
    - Practical application via a hands-on performance assessment.
  - Implement field verification strategies that leverage the performance criteria rubric as a means for QA/QC.

## Documents Reviewed

In preparing this recommendation, the Working Group considered the following industry studies and policy documents:

- Don Vial Center Report: Workforce Issues and Energy Efficiency Programs: A Plan for California’s Utilities released May 2014.
- CLTEESP HVAC Action Plan, 2010-2012, Goal 2: Quality HVAC Installation and Maintenance (p.23): “In the ideals of the Strategic Plan, all technicians and installers will obtain relevant certification by the end of 2020 in order to get an HVAC contractor license.”
- SB 350 Clean Energy and Pollution Reduction Act of 2015, specifically, “The Commission shall adopt, implement, and enforce a responsible contractor policy for use across all ratepayer-funded energy efficiency programs that involve installation or maintenance, or both installation and maintenance, by building contractors to ensure that retrofits meet high-quality performance standards and reduce energy savings lost or foregone due to poor-quality workmanship.”
- AB 758 Comprehensive EE Program for Existing Buildings 2015– specifically green workforce training.
- WHPA EBEE report recommendations for WE&T 3.3.1, specifically, #2 pipeline development and #4 alignment with IOU business planning process.
- WHPA WE&T Employer Support report recommendations.
- WHPA Industry Recognized Credentials List.
- SCE HVAC Optimization QM Contractor Eligibility Requirements 04 27 14.
- IOU Business Plans as posted on CAEECC website.
- EMI HVAC Contractor and Technician Behavior Study Phase 2 Report: specifically, “To educate customers about the training/certification requirements for trade allies to participate in the QI and QM programs.”

## Appendix A: SCE HVAC Optimization Program Eligibility Requirements

- LEVEL 2 TECHNICIAN REQUIREMENTS: FULLY-QUALIFIED TECHNICIAN
    - **Experience:** A minimum of five (5) years Heating, Ventilation & Air Conditioning service experience.  
AND
    - **Licenses:** Hold a valid Refrigerant Transition and Recovery Certification, Type II or Universal, as required by 40 CFR Part 82, Subpart F of Section 608 of the Clean Air Act of 1990. Valid 608 technician certifications must be issued under a Program approved by the U.S. Environmental Protection Agency.  
AND
    - **Certifications:** Hold appropriate certification from recognized industry certification bodies.
      - Recognized providers shall include those with ANSI 17024 recognition providing commercial HVACR certification that is highly related to HVAC service and system maintenance. At a minimum, the certification credential must include refrigerant cycle fundamentals, troubleshooting and optimization, electrical fundamentals, troubleshooting and optimization and air side fundamentals, troubleshooting and optimization focused on commercial HVAC systems.
      - Credentials that are currently accepted include UA HVAC STAR – HVACR Service and/or Mastery; NATE Heat Pump Service, Air Conditioning Service or HVAC Efficiency Analyst; HVAC Excellence Light Commercial, Air Conditioning, Heat Pump Service or Master Specialist Certification; RSES CM, CMS in any designation with CM, or SM in only Commercial Air Conditioning, or Heat Pump without a CM; Journeymen – HVAC Mechanic.
  - LEVEL 1 TECHNICIAN REQUIREMENTS: LESS-QUALIFIED TECHNICIAN
    - Level 1 Technicians assigned to assist fully-certified technicians in maintaining mechanical systems under the Program must meet the following requirements:
    - Be currently employed by the contractor
    - Have a minimum of twelve (12) months experience in the HVAC industry field
    - Hold an active EPA Card
    - Work under the direct supervision of a Program-certified technician
    - Submit a signed Level 1 Technician Application documenting their sincere commitment to continued HVAC education
    - Be currently involved in an approved HVAC education program with the commitment of becoming a fully-certified technician
      - Approved HVAC Education Programs include:
        1. [www.itsaboutq.com](http://www.itsaboutq.com): ItsAboutQ.com is sponsored by SCE and will provide an opportunity for technicians to advance their HVAC knowledge and expertise, and it is also a place for them to learn more about professional development and career advancement opportunities.
        2. Registered Apprenticeship Program
        3. IHACINATE Certification Training Series
        4. Accredited Trade/Career Tech Training Programs
- \*If a technician is not enrolled in one of the four items listed above but is enrolled in another HVAC education program, the IOU Program will consider those individuals on a case-by-case basis.

# WE&T CTWG Recommendations to Inform Comparable Training Work Product Summary

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**DATE:** December 9, 2016

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**INITIATING BODY:** Comparable Training Working Group

**WORK PRODUCT NAME:** Western HVAC Performance Alliance Recommendations to Inform Comparable Training

**TYPE OF ACTION REQUESTED:**  **VOTE**     **GUIDANCE**     **OTHER:** [Click here to enter text.](#)

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## APPROVAL HISTORY

**WORKING GROUP:** WE&T Comparable Training Working Group

**BY CONSENSUS**     **BY VOTE**

**TALLY:** Email consensus was achieved on November 8, 2016, by the following Working Group members: AHRI, Brownson, Segerstrom Consulting, HVAC Excellence, IHACI, Lupson & Associates, Pelican Wireless, SCE, SDG&E, and UA.

**DATE:** November 8, 2016

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**COMMITTEE:** Workforce Education & Training Committee

**DATE:** December 2, 2016

**BY CONSENSUS**     **BY VOTE**

**TALLY:** Consensus was achieved at the WE&T Committee Meeting on December 2, 2016, by the following Committee members: CalCERTS, CEES-Advisors, Segerstrom Consulting, HVAC Excellence, PG&E, PIPE Trades Training Center, SCE, SoCalGas, and UA.

**DATE:** December 2, 2016

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**WORK PRODUCT OBJECTIVES:** None

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# WE&T CTWG Recommendations to Inform Comparable Training Work Product Summary



## CA ENERGY EFFICIENCY PLAN STRATEGIC GOAL ALIGNMENT:

GOAL 1     GOAL 2     GOAL 3     GOAL 4

## CEESP HVAC GOAL STRATEGIES:

HVAC Strategy 2-3: Develop and provide expanded QI/QM training for contractors, technicians and sales agents.  
WE&T Strategy 1-2: Support the community college and adult education efforts to support.

**BENEFITS:** The IOUs requested that the WHPA WE&T Committee provide further definition to the term “comparable training” used in the Don Vial Center Report (DVC Report): Workforce Issues and Energy Efficiency Programs: A Plan for California’s Utilities released in May of 2014. The DVC Report uses the term “comparable training” in their labor demand strategies for energy savings which states:

- B. Adopt specific skills certification requirements in conjunction with quality assessment activities (see Exhibit 2.2 Decision Tree) for contractors and technicians working on ratepayer-subsidized EE projects.
- 3. HVAC Quality Installation and Quality Maintenance: Require graduation from a state-certified apprenticeship program, a 2-year degree in HVAC, or proof of comparable training and experience for jobsite HVAC technicians.

The WHPA WE&T Committee formed the Comparable Training Working Group (the Working Group) to work on this goal. This document codifies the findings of the Working Group. The findings can be used by the IOU WE&T Staff to inform future work.

**OUTSTANDING ISSUES / DEBATES / MINORITY VIEWS:** None

**POTENTIAL AUDIENCE:** IOU WE&T Staff

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**EXECUTIVE COMMITTEE:** On January 18, 2017, at the Executive Committee Meeting, motion was made to approve this as a WHPA Work Product

**VOTE TALLY:** Motion was made by ASHRAE (Ron Jarnagin) and seconded by IHACI (Bob Wiseman). Additional AYE votes were cast by ACCA (Don Langston), AHRI (Garrett McGuire), ASHRAE (Ron Jarnagin), HARDI (Talbot Gee), NCI (Dominick Guarino), PG&E (Jeanne Duvall), SCE (Scott Higa), SDG&E (Jeremy Reefe), SoCalGas (Harvey Bringas), and UA (Don Tanaka).

There were no NAY votes.

There were two ABSTENTIONS by CPUC (Carmen Best).

**FURTHER ACTIONS REQUIRED:** WHPA Staff will ensure that the combined “WE&T CTWG Recommendations to Inform Comparable Training” Report and its Work Product Summary is properly posted in accordance with established marketing protocol for approved WHPA Work Products

**NEXT STEPS:** This Work Product will be posted on Performance Alliance website and made available to IOU WE&T Staffs.