

Evaluating Workforce Education and Training Programs in California in 2020

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ABSTRACT

Due to the COVID-19 crisis changes were made to the WE&T programs, and evaluation methodology to accommodate the needs of the crisis. Due to COVID-19, changes in evaluation study methods and expected timeline were required. Final data was initially expected August 2021 with the final evaluation report released in October 2021 but due to several factors the timeline has been extended to the first quarter of 2022.

COVID-19 shaped and is expected to continue to shape the direction of WE&T programing including increased online trainings, new technology allowing for online interaction, and other changes. The methodology changes required to collect sufficient data safely during the COVID-19 crisis may inform future evaluation efforts.

Introduction

This paper provides background on California's Workforce Education and Training (WE&T) programs, changes, challenges, and opportunities related to COVID-19, and explores the methodology of the Group B WE&T evaluation of WE&T programs performed by Opinion Dynamics.

Background

The CPUC has funded workforce education and training (WE&T) programs in its energy efficiency portfolio for over a decade. WE&T programs offer energy efficiency focused training with a focus on supporting a trained and skilled energy efficiency workforce, and disadvantaged workers. Across the portfolio, WE&T programs reached over 50,000 participants in 2020; this represents a substantial increase in participation over 2019 in three out of the four California IOU (Investor-Owned Utility) service territories (PG&E, SDG&E, SCE, and SCG).

There were two WE&T sub-programs administered by the California IOUs in 2020:

Career Connections

- Audience is K-12 students
- Educate about Energy Efficiency and sustainability
- Increase awareness of Energy Efficiency career opportunities

Career and Workforce Readiness

- Focus on Disadvantaged Workers entering the workforce
- Focus on job training and job placement in the energy efficiency field
- Classes on a range of energy efficiency topics including equipment installation, certification classes (including Building Operator Certification), sector and technology specific training, electrification, and other topics.
- Tool Lending Library

In 2008, the Commission issued its Long-Term Energy Efficiency Strategic Plan. The Strategic Plan requires that, by 2020, “California’s workforce is trained and fully engaged to provide the human capital necessary to achieve California’s economic energy efficiency and demand-side management potential.” Subsequent Commission directives have continued to call for the IOUs to address these issues.

In the 18-05-041 *Decision Addressing Energy Efficiency Business Plans*, the CPUC ordered program administrators to adhere to the following high-level guidance:

- Expand/initiate partnerships with entities that do job placement
- Require placement experience for any new partners in the workforce, education, and training programs and new solicitations;
- Require “first-source” hiring from a pool of qualified candidates, before looking more broadly, beginning with self-certification at the beginning; and
- Facilitate job connections, by working with implementers and contractor partners, and utilizing energy centers

D.18-05-041 also introduced the following metrics related to Education and Training programs:

Collaborations:

- Number of partnerships by sector
- Number of participants by sector
- Percent of participation relative to eligible target population for curriculum

Diversity of Participants:

- Percent of disadvantaged participants trained (ID by zip codes)
- Percent of incentive dollars spent on measures verified to have been installed by contractors with a demonstrated commitment to provide career pathways to disadvantaged workers
- Number of energy efficiency projects related to the WE&T training on which a participant has been employed for 12 months after receiving the training

D.18-10-008, passed in 2018, required specific Workforce Standards and provided a definition of disadvantaged workers; these are defined as individuals that meet at least one of the following criteria:

lives in a household where total income is below 50 percent of Area Median Income; is a recipient of public assistance; lacks a high school diploma or GED; has previous history of incarceration lasting one year or more following a conviction under the criminal justice system; is a custodial single parent; is chronically unemployed; has been aged out or emancipated from the foster care system; has limited English proficiency; or lives in a high unemployment ZIP code that is in the top 25 percent of only the unemployment indicator of the CalEnviroScreen Tool.

Provisions in D.18-10-008 relating to Workforce Standards include requirements for program funded projects that include heating, ventilation, and air conditioning (HVAC) and Lighting Control measures include the following:

All projects that include the installation, modification, or maintenance of HVAC equipment in non-residential buildings that reserve a project incentive of \$3,000 or more must utilize installation technicians:

- *Enrolled in and/or completed California or federal accredited HVAC apprenticeship; or*
- *Who have completed at least 5 years of work experience at the journey level per CA DIR and passed competency tests; or*

- *Have received a C-20 HVAC contractor license from CA state licensing board*

All projects that include the installation of lighting control measures in non-residential buildings that reserve a project incentive of \$2,000 or more must utilize installation technicians:

- *That are California Advanced Lighting Controls Training Program (CALCTP) certified*
- *Note: Program Administrator may file a Tier 2 advice letter proposing other programs equivalent to CALCTP*

Moving forward, WE&T programs will be administered by a third party with PG&E as the statewide administrator via the third-party process as outlined in D. 18-01-004. This decision required a certain percentage of the IOU portfolios be run by third parties; 25% by December 2018, 40% by December 2020, and 60% by December 2022. The WE&T programs were contracted through this solicitation process. At the time of this writing, PG&E has signed the contract with two contractors, one for each Career Connections and Career and Workforce Readiness programs, with plans to begin administration in 2022.

2020 WE&T Program Administration

Changes necessary due to COVID-19 have shaped the direction of WE&T programming. Due to the necessity of remote learning for the continuation of WE&T programming in 2020, California IOUs increased online trainings, invested in technology allowing for easier online interaction, and made other programmatic changes.

In March 2020, all four IOUs closed their in-person energy centers and stopped offering in-person classes. PG&E expanded their online offerings from 33 to 55 classes and continued to expand their library of online classes over the course of the year. By the end of 2020, PG&E had offered 460 classes to 19,572 participants as shown in Figure 1. As shown in Figure 1, this was a 144% increase in participants over 2019. SCE and SDG&E both saw increases in (123% and 119% over 2019 participation). For SCG participation in WE&T classes fell during 2020. SCG program administrators stated that this was due to the fact that a larger percentage of their classes had in-person components necessitating a shrinking of their class offerings (PG&E, 2021) (SCG, 2021) (SDG&E, 2021) (SCE, 2021).

The program administrators communicated that a small number of classes necessarily were canceled for the 2020 program year due to required in-person components and hands-on training. The IOUs have been working on options to offer these courses again, including limited in-person offerings and online alternatives to in-person hands-on classes. Plans to implement these alternatives is ongoing.

Prior to 2020, California IOUs were planning to offer more online courses through their WE&T programs in the upcoming program years. The needed programmatic changes to continue offering WE&T classes in 2020 sped up the uptake of online learning by at least one program year. California IOUs are planning to continue expanding their online classes for their WE&T programming, citing the ability to reach a larger geographic audience and greater diversity of classes. Moving forward the IOUs are making plans to safely offer in-person classes as well as having a greater emphasis on online classes than was present prior to 2020.

Figure 1: WE&T Class Participation 2017-2020

Number of participants by sector						
PA	Sector	2017	2018	2019	2020	2019-2020 Change
PG&E	Residential	3,680	3,463	3,866	8,254	147%
	Non-Residential	3,574	9,259	9,596	11,565	
	Total	7,254	12,722	13,462	19,819	
SCG	Residential	5,364	4,652	2,253	834	-44%
	Non-Residential	4,236	3,611	11,513	5,234	
	Total	9,600	8,263	13,766	6,068	
SDGE	Residential	889	563	520	185	119%
	Non-Residential	5,814	5,853	5,566	7,036	
	Total	6,703	6,416	6,086	7,221	
SCE	Total	12,134	14,216	15,947	19,572	123%

Note: SCE did not report class participation by sector

2020 WE&T Program Evaluation

In 2018 the CPUC solicited studies to evaluate energy efficiency programs and related issue areas. Five WE&T evaluation studies were solicited under the Group B evaluations awarded to Opinion Dynamics (California Public Utilities Commission, 2018). The research objectives of the five studies are the following:

Deliverable 26 (WE&T-1): WE&T and Installation Improvement Evaluation Study

- Assess the effectiveness of WE&T programs specifically among installation professionals;
- Assess the impact of each training workshop/session provided for relevant professions;
- Identify and assess the connection between training and improved installation practices;
- Provide recommendations on how to improve WE&T programs; and,
- Collect data to assess whether and to what extent WE&T programs drive energy savings.

Deliverable 27 (WE&T-2): Partnerships with Training Institutions Impact Evaluation

- Define the term partnership;
- Identify partnership types;
- Map existing and planned partnerships to partnership types;
- Determine the evaluability of partnerships;
- Understand the functioning and impact of partnerships with WE&T training and job placement organizations;

- Characterize how partnerships are being implemented;
- Determine and measure partnership effectiveness indicators (such as joint ownership and accountability for results, and effective communication and collaboration strategies); and,
- Assess the impacts (such as job placement and gross energy savings) of two WE&T partnerships as case studies.

Deliverable 28 (WE&T-3): WE&T Career Connections Process Evaluation

- Develop/Refine a Career Connections logic model; and,
- Assess the evaluability and adaptability of the Career Connections Program.

Deliverable 29 (WE&T-4): Career and Workforce Readiness Process Evaluation

- Develop a Career and Workforce Readiness logic model; and,
- Assess the evaluability of the Career and Workforce Readiness Program.

Deliverable 30 (WE&T-5): Knowledge, Skills, and Abilities Market Studies

- Identify the KSAs needed for implementers, contractors, technicians, and contractor laborers on energy efficiency and whole building design concepts within specific industries. (Opinion Dynamics, 2020)

Changes and Challenges Related to COVID-19

Similar to WE&T program design, evaluation of WE&T programming has changed with the inclusion of exclusive online learning. The methodology changes required to collect sufficient data safely during the COVID-19 crisis may also inform future evaluation efforts. Although all but one study – Deliverable 30: Knowledge, Skills, and Abilities Market Studies completed in January 2020 - was conducted after March 2020, the methodology for Deliverable 26: WE&T and Installation Improvement Evaluation Study was affected the most by programmatic changes and safety concerns and is the focus of this section. Several challenges were identified with conducting this evaluation of WE&T programs with the added issues of COVID-19 as explored below.

Deliverable 26 generally is focused on the link between Workforce Education and Training (WE&T) installer training programming and increased energy savings. This study focused on residential and small commercial HVAC (including heat pump water heaters). Among the evaluation tasks for this study were surveys of program instructors, surveys of program participants, reviewing the results of program pre- and post- tests, and ride-alongs. Deliverable 26 is expected to be completed in the first quarter of 2022.

One minor change to the evaluation plan was that traditional WE&T evaluations have been conducted primarily on in-person classes with pre- and post- class tests. As the IOUs moved to exclusive online program offerings in March 2020, the evaluation plan was quickly adjusted to evaluate online courses and this change did not affect the timeline of the study.

Due to COVID-19, changes in how the behavioral assessment portion of the study was conducted were also required. To assess how program participants have changed their behavior due to the WE&T programming, the more typical in-person ride-alongs were replaced with virtual ride-alongs in order to follow safety protocols for program participants as well as evaluators. These virtual ride-alongs intended to use Canoga Park Heating & Air Conditioning's Virtual Service platform developed in partnership with the Institute of Heating and Air Conditioning (IHACI). This technology will allow observation of technicians in the field, collecting data related to the job including temperature, refrigerant charge, and static pressure. The software also allows the ability to speak with technicians directly during and after each visit.

Although this technology will allow for evaluation contractors to assess behavior safely, issues with the evaluation timeline were identified due to the use of this technology. The technology was still under development during the study period, and the expected timeline for release of the technology for

use was pushed back several times. This in turn required the program evaluation timeline to be pushed back further as well.

A related issue was that the IOUs paused in-home energy efficiency installations in 2020. This resulted in a larger gap between participation in WE&T programs and potential participation of program participants in energy efficiency installation programs. Additionally, due to the longer timeline between program participation and evaluation, the evaluation contractors saw lower participation rates for online surveys of program participants, and interviews with program staff than anticipated. This may in part have been due to out of date contact information for these parties due to the necessary extended timeline between program participation and evaluation.

Potential Opportunities

Although the COVID-19 crisis led to a number of challenges in both program implementation and program evaluation, the changes made may have positive outcomes to future programs and program evaluation.

The increased online offerings made by IOUs are planning to be continued at least until the next program year. This shift has coincided with an increase in program participation over 2019 in three out of four IOU territories. The IOUs communicated that offering more classes online increases their ability to reach a larger geographic audience as well as offer a greater diversity of classes. Although a few hands-on classes were not able to translate to an online medium, the majority of classes were able to be offered online. Moving forward, the IOUs have an increased ability to offer a wide range of classes online.

The use of the IHACI technology in program evaluation is another potential opportunity. This technology allows for the remote collection of data of installation technicians. Expanding the use of this technology could allow for more robust data collection of participant installation activities by automatically collecting a number of data points on the installation as it is being installed. This may add positively to the evaluation of participant behavior.

Conclusion

COVID-19 has been challenging for a number of areas in WE&T programming and evaluation. The need to address these challenges led to several opportunities for the future of WE&T programming and evaluation. The shift to online programming may assist the IOUs in reaching a broader audience for their WE&T classes, and the use of IHACI technology may be useful in evaluations beyond 2021.

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