

# Delivering Opportunity

*How Electric Buses and Trucks Can Create Jobs  
and Improve Public Health in California*

[www.ucsusa.org/ElectricTrucks](http://www.ucsusa.org/ElectricTrucks)

[www.greenlining.org/issues/2016/delivering-opportunity-electric-trucks](http://www.greenlining.org/issues/2016/delivering-opportunity-electric-trucks)

## Appendix B: Training Programs

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[TRAINING PROGRAMS]

TABLE B-1. GOVERNMENT-SPONSORED TRAINING

Training and Placement Programs/Services	Program/Services Offering
<p><b>California Energy Commission “Alternative &amp; Renewable Fuel &amp; Vehicle Technology Program” (ARFVTP)</b></p> <p><b>Website:</b>  <a href="http://www.energy.ca.gov/drive/investing/index.html">www.energy.ca.gov/drive/investing/index.html</a></p>	<p>The ARFVTP has four policy goals.</p> <ul style="list-style-type: none"> <li>• Workforce development and training delivery to target non-college bound high school graduates and individuals with training and/or experience in traditional fuels and vehicle technologies</li> <li>• Regional industry sector plan development that brings together economic, education, and workforce development practitioners with industry to compose regional sector strategies to support and advance alternative fuels and vehicle technologies</li> <li>• Labor market information research to estimate regional and statewide employment, employer demand, and skill requirements for occupations related to alternative and renewable fuels and vehicle technologies</li> <li>• New entrant career path development to develop career paths for new industry and to address white-collar workers’ training needs related to alternative fuel and vehicle technologies</li> </ul>
<p><b>Clean Energy Workforce Training Program (CEWTP)</b></p> <p><b>Website:</b>  <a href="http://www.energy.ca.gov/2010_energypolicy/documents/2010-07-21_workshop/presentations/07_cec_graillat_iepr_workshop_072110.pdf">www.energy.ca.gov/2010_energypolicy/documents/2010-07-21_workshop/presentations/07_cec_graillat_iepr_workshop_072110.pdf</a></p>	<p>CEWTP is a \$90-million multiagency initiative to identify clean energy workforce needs, build regional capacity in clean energy sector development, and deliver industry relevant training for displaced workers and new workforce entrants. To this end, the California Energy Commission has allocated over \$25 million to support workforce training programs as well.</p>
<p><b>Employment Training Panel (ETP)</b></p> <p><b>Website:</b>  <a href="http://www.etp.ca.gov">www.etp.ca.gov</a></p> <p><b>Example Training Funded:</b></p> <ul style="list-style-type: none"> <li>• Vocational English as a second language</li> <li>• Manufacturing</li> </ul>	<p>ETP funds provide training and retraining for incumbent workers and new hire training for the unemployed.</p> <p>ETP has partnered with the ARFVT Program to fund training programs to single employers, multiple employer partnerships, training agencies, trade associations, joint apprenticeship training councils, labor unions, and other eligible entities who need to train workers in alternative fuel and vehicle technologies.</p> <p>Under the ARFVT program, ETP delivers workforce training to over 124 businesses, 14 municipalities, and 13,674 trainees.</p>

<ul style="list-style-type: none"> <li>• Computer training</li> <li>• Management skills</li> </ul>	
<p><b>California Workforce Investment Board Regional Industry Clusters of Opportunity (RICO) grants</b></p> <p><b>Website:</b>  <a href="http://cwdb.ca.gov/Initiatives.htm">http://cwdb.ca.gov/Initiatives.htm</a></p>	<p>The California Workforce Investment Board partnered with ARFVT Program through the board’s Employment Development Department agreement to develop Regional Industry Clusters of Opportunity (RICO) grants related to alternative fuels and advanced transportation industry clusters throughout California.</p> <p>The RICO initiative is a structured economic and workforce development planning process that brings regional economic and workforce development practitioners and business together to develop regional strategies to support and advance the competitive position of targeted industry clusters. The board and the California Energy Commission made approximately \$605,000 available to develop and implement alternative fuel and vehicle regional clusters of opportunity strategies and involve partners to advance the competitive position of targeted clusters.</p>
<p><b>SunLine Transit Agency Center of Excellence in Zero Emission Technology</b></p> <p><b>Website:</b>  <a href="http://www.sunline.org">www.sunline.org</a></p>	<p>The Center of Excellence in Zero Emission Technology is a collaboration among public and private organizations, including transit agencies, colleges, private industry, and government agencies, that ensures the development of excellence in the maintenance of zero-emission buses.</p> <p>SunLine Transit Agency has partnered with College of the Desert, Rio Hondo College, California Community College-Doing What Matters, BAE Systems, Ballard Power Systems, BYD Coach and Bus, Hydrogenics, and Proterra to develop the Center of Excellence in Zero Emission Technology. SunLine plans to foster additional partnerships with local economic development organizations, transit agencies, colleges, government agencies, workforce development groups, and industry to enhance the program’s effectiveness and reach.</p>

TABLE B-2. COMMUNITY COLLEGE AND VOCATIONAL/TECHNICAL-SPONSORED PROGRAMS

Training and Placement Programs/Services	Program/Services Offering
<p><b>California Community Colleges Chancellor’s Office (CCCCO)</b></p> <p><b>Website:</b> <i>http://doingwhatmatters.cccco.edu</i></p>	<p>CCCCO delivers funding for curricular and training material development, train-the-trainer instruction, and training equipment to meet the program-related needs of California community colleges. CCCCCO publishes a series of assessment reports and itemizes the training and instructional needs of the community colleges and the existing instructional resources existing within the community college system.</p> <p>Under the ARFVTP, the CCCCCO has delivered training funds to 14 automotive programs and their participants, increasing the number of automotive technicians that serve the growing clean fuels transportation market.</p>
<p><b>California Community Colleges Economic and Workforce Development Program (EWD)</b></p> <p><b>Website:</b> <i>www.cccewd.net/initiative_coe.cfm</i></p>	<p>EWD is an integral part of California’s Doing What Matters for Jobs and the Economy framework. EWD invests funding and resources in industry sectors that are key to California’s economic growth and acts as a statewide network for delivering education and training services to businesses, workers, and jobseekers in key growth industries and new technologies.</p> <p>EWD identified advanced transportation and renewables and advanced manufacturing as two of ten priority sectors. The programs are geared for community college, workforce, or economic development professionals.</p>
<p><b>Alternative Transportation and Renewable Energy Program (ATRE)</b></p> <p><b>Website:</b> <i>www.atreeducation.org</i></p> <p><b>Example Programs:</b></p> <ul style="list-style-type: none"> <li>• Electric, Hybrid and Hydrogen Fuel Cell Programs</li> <li>• Intelligent Transportation Systems Programs</li> </ul>	<p>ATRE, established by EWD, provides up-to-date training and work experience for students and faculty through industry partnerships. ATRE provides an array of transportation, energy technology, and related technical education, assistance, and outreach programs throughout California, enabling students, technicians, faculty, and the public to effectively learn, teach, and work with advanced transportation and renewable energy technologies. ATRE produces replicable curricula, services, and programs tailored to the needs of employers and employees throughout California.</p>
<p><b>National Alternative Fuels Training Consortium (NAFTC)</b></p> <p><b>Website:</b> <i>http://naftc.wvu.edu</i></p> <p><b>Locations:</b> El Camino College, Fresno City College, Rio Hondo College, Yuba College</p>	<p>NAFTC includes educational institutions, fuel providers, equipment and parts manufacturers, professional educational and training associations, industry, and federal and state agencies. The consortium operates through a network of National Training Centers (NTCs). NTCs are postsecondary education and training organizations that provide vehicle instruction and a demonstrated commitment to move toward providing instruction in alternative fuels, alternative fuel vehicles, advanced technology vehicles, and related technologies.</p>

<p><b>Example Skills/Training:</b></p> <ul style="list-style-type: none"> <li>• Electric-drive-vehicle first-responder safety training</li> <li>• Electric-drive-vehicle career and technical education training</li> <li>• Electric-drive-vehicle infrastructure training</li> <li>• Basic understanding of battery electric and hybrid electric vehicles</li> </ul>	
<p><b>California Centers of Excellence</b></p> <p><b>Website:</b> <i>www.coecc.net</i></p> <p><b>Example Technical Assistance:</b></p> <ul style="list-style-type: none"> <li>• Environmental scans</li> <li>• Gap analyses</li> <li>• Labor market assessments</li> </ul>	<p>EWD’s Centers of Excellence initiative supports community colleges by providing customized data on high-growth, emerging, and economically critical industries and occupations and their related workforce needs. The seven centers, located throughout California to study regional economies, produce industry-validated environmental scans designed to enable community colleges to remain relevant and responsive in their offerings. The centers provide technical assistance to community colleges and workforce and economic development professionals.</p>

TABLE B-3. **NONPROFIT AND INDUSTRY-MANAGED JOB-TRAINING AND EDUCATION PROGRAMS**

Training and Placement Programs/Services	Program/Services Offering
<p><b>Electric Vehicle Infrastructure Training Program (EVITP)</b></p> <p><b>Website:</b> <i>www.evitp.org</i></p> <p><b>Example Skills/Training:</b></p> <ul style="list-style-type: none"> <li>• National Electrical Code, National Fire Protection Association, and National Electrical Installation Standards requirements</li> <li>• EV battery types, specifications, and charging characteristics, utility interconnect, notice, policies and requirements</li> <li>• Charging station fundamentals, including brand- and model-specific installation instructions</li> </ul>	<p>EVITP, a voluntary nonprofit collaborative of over 30 electrical-industry organizations, provides training and certification for licensed electricians installing electric vehicle supply equipment (EVSE). EVITP offers training at community colleges and electrical training centers, and has certified over 1,000 electricians for the proper installation of EVSE equipment. With curricula developed by EVITP industry partner organizations, the training teaches best practices in EV infrastructure installation, commissioning, and maintenance.</p>
<p><b>Southern California Regional Transit Training Consortium (SCR TTC)</b></p> <p><b>Website:</b> <i>www.scrttc.com</i></p> <p><b>Location:</b> Long Beach</p> <p><b>Example Skills/Training:</b></p> <ul style="list-style-type: none"> <li>• Advanced electrical systems on transit</li> <li>• Network systems electronics diagnosis and repair</li> <li>• Network communication: Introduction to PLC and data networks</li> <li>• Leadership: Transition to supervisor</li> </ul> <p><b>SCR TTC 2016 Course Catalog:</b> <i>www.scrttc.com/images/stories/PDFs/scrttc_course_catalog_2016.pdf</i></p>	<p>SCR TTC is a 501(c)(3) that provides a training resource network comprised of community colleges, universities, transit agencies, and public and private organizations in Southern California, with a mission to advance the skills of the transit workforce and prepare for the future. In 2015, the consortium, comprised of about 46 public transportation agencies and academic members, identified training associated with electric buses as one of its top two training needs. The consortium faces the challenge of helping to provide the technical training requirements to safely remain current with the technologies integral to low- and zero-emission transit vehicles. In partnership with local community colleges, SCR TTC identifies training needs to meet continually advancing training requirements through a yearly <i>Needs Assessment</i> report.</p>
<p><b>Cypress Mandela Training Center, Inc., Oakland Green Jobs Corps</b></p>	<p>The Oakland Green Jobs Corps provides “green pathways out of poverty” for young adults in Oakland facing barriers to</p>

<p><b>Website:</b>  <a href="http://www.cypressmandela.org/our_programs/green_jobs_program">www.cypressmandela.org/our_programs/green_jobs_program</a></p> <p><b>Location:</b>  Oakland</p> <p><b>Example Skills/Training:</b></p> <ul style="list-style-type: none"> <li>• Job safety</li> <li>• Electrical fundamentals</li> <li>• Life skills: Time management, budgeting, nutrition, job survival skills, mentoring, team building, and relationships</li> </ul>	<p>employment. The program, a partnership among Cypress Mandela Training Center, Laney College, and Growth Sector, offers job-readiness training, ongoing support services, and on-the-job training, enabling trainees to pursue careers in green industries.</p>
<p><b>Clean Tech Institute (CTI)</b></p> <p><b>Website:</b>  <a href="http://www.cleantechinstitute.org/Training/CEVT.html">www.cleantechinstitute.org/Training/CEVT.html</a><i>Example</i></p> <p><b>Locations:</b>  NASA Ames Research Center in Moffett Field, Garden Grove, Los Angeles, Riverside, San Diego</p> <p><b>Example Training:</b></p> <ul style="list-style-type: none"> <li>• Introduction to advanced vehicle technologies</li> <li>• High-voltage electrical safety</li> <li>• High-voltage vehicle safety systems</li> <li>• Electric circuit systems</li> <li>• Battery management systems</li> </ul>	<p>CTI is a clean and renewable-energy research, consulting, and training organization. It offers research, consulting, and training services on advanced renewable energy projects, advanced EV technologies, and certified EV technician training programs. CTI is the first approved and eligible training provider by California under its Clean Tech Workforce Training Program that includes: Certified Electric Vehicle Technician (CEVT) training program, Certified Photovoltaic Systems Specialist (CPVS) training program, and Certified Nanotech and Cleantech Professional (CNCP) program. The CEVT program, a 16-week comprehensive course, offers free tuition for qualified candidates eligible under funding from the Employment Development Department and WIA. The program is designed to train a new generation of EV specialists to work in EV production, repair, and maintenance.</p>

**[ADDITIONAL RESOURCES]**

Environmental Defense Fund. No date. Green Jobs Guidebook. Online at [www.edf.org/sites/default/files/california-green-jobs-guidebook-small-download.pdf](http://www.edf.org/sites/default/files/california-green-jobs-guidebook-small-download.pdf).

“Green job apprenticeship programs offered by unions and utilities” and “California green job apprenticeship programs” in Green Jobs Guidebook, pp. 47-48: Online at [www.labormarketinfo.edd.ca.gov/contentpub/GreenDigest/Apprenticeship\\_Programs.pdf](http://www.labormarketinfo.edd.ca.gov/contentpub/GreenDigest/Apprenticeship_Programs.pdf).

Williams, B., J.R. DeShazo, A. Kerbel, S. Tongxin Xu. 2015. Existing TE-specific training in Southern California, transportation electrification curriculum development. Los Angeles, CA: University of California, Los Angeles, Luskin Center for Innovation. Online at [http://innovation.luskin.ucla.edu/sites/default/files/TECD\\_Report%20%20Web\\_0.pdf](http://innovation.luskin.ucla.edu/sites/default/files/TECD_Report%20%20Web_0.pdf).