CENTER OF EXCELLENCE FOR LABOR MARKET RESEARCH
LOS ANGELES

Labor Market Analysis: 0934.00 – Electronics and Electric Technology

Electric Vehicle Charging Station Installation, Maintenance and Repair – Certificate of Achievement

Los Angeles Center of Excellence, February 2025

Program Endorsement:	Endorsed: All Criteria Met ☐	Endorsed: Some Criteria Met ☒	Not Endorsed ☐

Program Endorsement Criteria		
Supply Gap:	Yes ☑	No ☐
Living Wage: (Entry-Level, 25th)	Yes ☐	No ☑
Education:	Yes ☑	No ☐
Emerging Occupation(s)		
	Yes ☐	No ☑

SUMMARY

This report analyzes whether local labor market demand is being met by community college programs aligned with the identified middle-skill occupation[1] or whether a shortage of workers exists. Labor market demand is measured by annual job openings while education supply is measured by the number of awards (degrees and certificates) conferred on average each year.

Based on the available data, there appears to be a supply gap for the one identified middle-skill occupation in the region. While entry-level wages are lower than the self-sufficiency standard wage in both Los Angeles and Orange counties, more than one-third of current workers in the field have completed some college or an associate degree as their highest level of educational attainment.

Recommendation: Due to two of three program endorsement criteria being met, the Los Angeles Center of Excellence for Labor Market Research (LA COE) endorses this proposed program.

Key Findings

Supply Gap

- 2,240 annual job openings are projected in the region through 2028. This number is greater than the three-year average of 1,174 awards conferred by educational institutions in the region.

[1] Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree. The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

- Over the past 12 months, there were **28 online job postings for *electricians* that mentioned "electric vehicles" and 2 job postings that listed Electric Vehicle Infrastructure Training Program (EVITP) as a required qualification.**

Living Wage

- $23.85 is the typical entry-level hourly wages for *electricians*, which is lower than Los Angeles County's self-sufficiency standard hourly ($24.03/hour).[2]

Educational Attainment

- A high school diploma or equivalent is the typical entry-level education for *electricians,* according to the Bureau of Labor Statistics (BLS).
- 46% of workers in the field have completed some college or an associate degree, according to national educational attainment data.

Community college supply

- 17 community colleges issued awards related to electrical technology in the greater LA/OC region.
- 582 awards (degrees and certificates) were conferred on average each year between 2021 and 2023.

Other postsecondary supply

- 7 educational institutions in the LA/OC region have conferred awards in programs related to electrical technology over the past three years.
- 592 awards were conferred on average each year by other postsecondary institutions throughout the greater LA/OC region between 2020 and 2022.

TARGET OCCUPATION

LA COE prepared this report to provide regional labor market and postsecondary supply data related to one middle-skill occupation:

- ***Electricians* (47-2111)** Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems.[3]

According to the Bureau of Labor Statistics (BLS), as the number of plug-in hybrids and battery-electric vehicles on the roads increases, there will be a growing need for electric vehicle (EV) charging stations. *Electricians* (47-2111) will install, maintain and repair these charging stations.[4] EV charging stations funded by the California Public Utilities Commission (CPUC), the CA Energy Commission (CEC), or the state bord must be installed by a licensed contractor and at least one electrician on each installation must hold an Electric Vehicle Infrastructure Training Program (EVITP)

[2] Center for Women's Welfare, University of Washington. (2024). *The self-sufficiency standard for California 2024.* http://selfsufficiencystandard.org/California.
[3] Electricians (bls.gov)
[4] Careers in Electric Vehicles : U.S. Bureau of Labor Statistics

certification (Assembly Bill 841). EVITP is an online program available to California state-certified electricians. The 20-hour course costs $275.[5]

OCCUPATIONAL DEMAND

Exhibit 1 shows the five-year occupational demand projections for *electricians*. In the greater Los Angeles/Orange County region, the number of jobs related to this occupation is projected to increase by 4% through 2028. There will be more than 2,200 job openings per year through 2028 due to job growth and replacements. The majority of jobs in 2023 for *electricians* (64%) were located in Los Angeles County.

Exhibit 1: Current employment and occupational demand, Los Angeles and Orange counties[6]

Geography	2023 Jobs	2028 Jobs	2023-2028 Change	2023-2028 % Change	Annual Openings
Los Angeles	14,840	15,375	535	4%	1,422
Orange	8,307	8,691	384	5%	818
Total	**23,147**	**24,066**	**919**	**4%**	**2,240**

Detailed Occupation Data

Exhibit 2 displays the current employment and projected occupational demand for the target occupation in Los Angeles County. Positive scores for automation resilience[7] reflect a lower-than-average threat of the occupation(s) being replaced by automation, while negative scores reflect a greater-than-average risk of automation. The average percentage of workers aged 55+ across all occupations in the Los Angeles/Orange County region is 26%; occupations with a larger share of workers aged 55 and older typically have greater replacement needs to offset the amount of impending retirements. On average, 81% of workers across all occupations in California are employed full-time.

Exhibit 2: Detailed employment and occupational demand, Los Angeles County[8]

Occupation	2023 Jobs	2028 Jobs	5-Yr % Change	Annual Openings	Automation Resilience	% Aged 55 and older	% Full Time Workers
Electricians	14,840	15,375	4%	1,422	(10.3)	24%	92%

WAGES

The labor market endorsement in this report considers the entry-level hourly wages for *electricians* in Los Angeles County as they relate to the county's self-sufficiency standard wage. Orange

[5] Electric Vehicle Infrastructure Training Program (EVITP) Information

[6] Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

[7] Automation risk is calculated based on the percentage of time spent on high-risk compared to low-risk work, the number of high-risk jobs in compatible occupations, and the overall industry automation risk.

[8] Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

County wages are included below in order to provide a complete analysis of the greater Los Angeles/Orange County region.

Los Angeles County

The typical entry-level hourly wages for *electricians* are $23.85, which is below the self-sufficiency standard wage for one adult ($24.03 in Los Angeles County). Experienced workers can expect to earn wages of $46.97, which is higher than the self-sufficiency standard (Exhibit 3).

Exhibit 3: Earnings for occupation in Los Angeles County

Occupation	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)	Median Annual Earnings*
Electricians	$23.85	$35.02	$46.97	$72,800

*Rounded to the nearest $100

Orange County

The typical entry-level hourly wages for *electricians* are $25.43, which is below the self-sufficiency standard wage for one adult ($27.13 in Orange County). Experienced workers can expect to earn wages of $49.31, which is higher than the self-sufficiency standard (Exhibit 4).

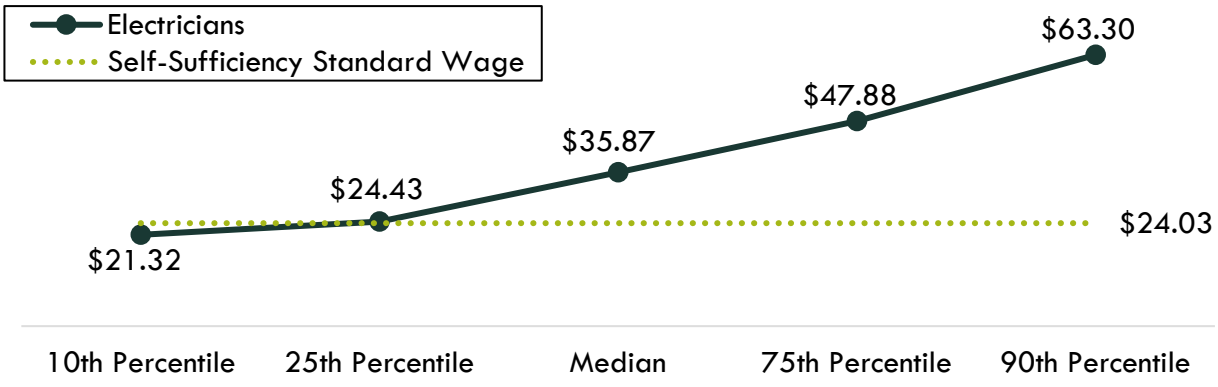
Exhibit 4: Earnings for occupation in Orange County

Occupation	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)	Median Annual Earnings*
Electricians	$25.43	$37.62	$49.31	$78,300

*Rounded to the nearest $100

Across the greater Los Angeles and Orange County region, the average entry-level hourly earnings for the occupation in this report are $24.43; this is above the living wage for one single adult in Los Angeles County ($24.03). Exhibit 5 shows the average hourly wage for the occupation in this report, for entry-level to experienced workers.

Exhibit 5: Average hourly earnings for electricians, Los Angeles and Orange counties



JOB POSTINGS BY OCCUPATION

There were 1,889 online job postings for *electricians* listed in the past 12 months in Los Angeles and Orange counties. Job postings were analyzed for the most common job titles, skills, and employers associated with the target occupation in this report (Exhibit 6).

Exhibit 6: Most commonly requested job titles, skills and employers in job postings, Los Angeles and Orange counties

Top Job Titles	Top Skills	Top Employers
• Electricians • Low voltage technicians • Journeyman electricians • Maintenance electricians • Residential electricians • Commercial electricians	• Electrical wiring • Electrical systems • Blueprinting • Hand tools/power tool operation • Low voltage	• Aerotek* • Powell Electric • Disney • Orange Electrical • PeopleReady* • Patriot Electric

*Staffing company

In the greater Los Angeles/Orange County region, 24% of the *electrician* job postings listed a minimum educational requirement. Exhibit 7 details the number and percentage of job postings by educational level.

Exhibit 7: Education levels requested in job postings for electricians, Los Angeles and Orange counties

Education Level	Job Postings	% of Job Postings
Bachelor's degree	50	11%
Associate degree	38	9%
High school diploma or vocational training	358	80%

JOB POSTINGS BY SKILL OR QUALIFICATION

Of the 1,889 online job postings for *electricians* listed in the past 12 months in Los Angeles and Orange counties, 28 job postings listed "electric vehicle" or "Electric Vehicle Infrastructure Training Program (EVITP)" as a skill or qualification. Job postings were analyzed for the most common job titles, skills, and employers associated with the target occupation in this report (Exhibit 7). Two job postings listed EVITP as a required qualification for employment.

Exhibit 7: Most commonly requested job titles, skills and employers in job postings, Los Angeles and Orange counties

Top Job Titles	Top Skills	Top Employers
• Electricians • Automotive electrical engineers	• Electric vehicles • Blueprinting	• Green Water And Power

Top Job Titles	Top Skills	Top Employers
• Certified electricians • Electrical Journeymen • Installers	• Electrical codes • Electrical equipment • Electrical systems	• Steve Carter Electric • Volt

EDUCATIONAL ATTAINMENT

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for *electricians* (Exhibit 8). However, the national-level data indicates 46% of workers in the field have completed some college or an associate degree as their highest level of educational attainment. The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupation in this report:

Exhibit 8: Entry-level education preferred by employers nationally, Bureau of Labor Statistics

Occupation	Education Level
Electricians	High school diploma or equivalent

EDUCATIONAL SUPPLY

Community College Supply

Exhibit 9 shows the annual and three-year average number of awards conferred by community colleges in programs that have historically trained for *electricians*. The colleges with the most completions in the region are LA Trade-Tech, Mt. San Antonio, and Long Beach.

Exhibit 9 Regional community college awards (certificates and degrees), 2021-2023

TOP Code	Program	College	2020-21 Awards	2021-22 Awards	2022-23 Awards	3-Year Average
0934.00	Electronics and Electric Technology	East LA	2	4	98	35
		El Camino	5	2	7	5
		Glendale	-	2	7	3
		LA City	-	-	1	0
		LA Pierce	17	14	13	15
		LA Southwest	-	4	6	3
		LA Valley	21	34	24	26
		Long Beach	42	79	69	63
		Mt San Antonio	39	152	138	110
		Pasadena	23	27	5	18
		Rio Hondo	1	2	2	2
		LA Subtotal	**150**	**320**	**370**	**280**
		Coastline	53	44	23	40

TOP Code	Program	College	2020-21 Awards	2021-22 Awards	2022-23 Awards	3-Year Average
		Irvine	9	16	12	12
		Orange Coast	12	6	-	6
		Saddleback	22	19	21	21
		OC Subtotal	**96**	**85**	**56**	**79**
Supply Subtotal/Average			**246**	**405**	**426**	**359**
0952.20	Electrical	LA Trade-Tech	135	147	150	144
		LA Subtotal	**150**	**320**	**370**	**280**
		Coastline	-	1	-	0
		Irvine	21	12	31	21
		Orange Coast	-	3	-	1
		Santiago Canyon	33	-	137	57
		OC Subtotal	**54**	**16**	**168**	**79**
Supply Subtotal/Average			**189**	**163**	**318**	**223**
Supply Total/Average			**435**	**568**	**744**	**582**

Other Postsecondary Supply

For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for *electricians*. Exhibit 10 shows the number of awards conferred by these institutions in relevant programs. Due to different data collection periods, the most recent data is from 2020 to 2022. Between 2020 and 2022, other postsecondary college institutions in the region conferred an average of 592 sub-baccalaureate awards. Sub-baccalaureate awards include associate degrees, postsecondary awards, and other academic awards that typically take fewer than four years to complete.

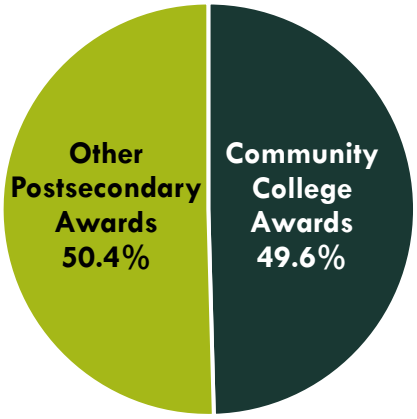
Exhibit 10: Other regional postsecondary awards, 2020-2022

CIP Code	Program	Postsecondary Institution	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Average
15.0399	Electrical/ Electronic Engineering Technologies/ Technicians, Other	Southern California Institute of Technology	1	-	-	0
46.0302	Electrician	Baldwin Park Adult & Community Ed.	61	74	75	70
		Capstone College	4	23	29	19
		InterCoast Colleges-Santa Ana	35	12	9	19
		InterCoast Colleges-West Covina	86	54	84	75

CIP Code	Program	Postsecondary Institution	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Average
		Southern California Institute of Technology	190	281	268	246
		UEI College-Huntington Park	-	-	120	40
		UEI College-West Covina	6	144	220	123
		Supply Total/Average	**383**	**588**	**805**	**592**

Exhibit 11 shows the proportion of community college awards conferred in the greater Los Angeles/Orange County region compared to the number of other postsecondary awards for the programs in this report. A slight majority of awards conferred in these programs are awarded by other institutions in the greater Los Angeles/Orange County region.

Exhibit 11: Percentage of community college awards compared to other postsecondary institution awards in the Los Angeles/Orange County region



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DATA SOURCES

- O*NET Online
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)