

Electricians

Labor Market Analysis: San Diego County

December 2017

Summary

The following list summarizes findings from the labor market analysis below for *Electricians*:

- Between 2016 and 2021, *Electricians* are projected to increase by 808 jobs (or 11 percent) in San Diego County.
- Employers in San Diego County will need to hire 936 workers annually to fill new jobs and to backfill jobs due to attrition such as retirement or turnover. The most demand will be in the Central Region.
- Between 2010 and 2017, there was an average of 399 online job postings per year for *Electricians* in San Diego County.
- *Electricians* earn median hourly earnings of \$29.06, more than the self-sufficiency wage (\$13.09 per hour) for a single adult in San Diego County.
- According to the California Community Colleges Chancellor's Office Management Information System (MIS) Data Mart, two colleges supply the region with an annual average of 115 awards for this occupation: Palomar College and San Diego City College.
- Comparing the labor demand against labor supply, there is a supply gap for this occupation in San Diego County, with 985 annual openings and 115 awards. Comparatively, there are 10,034 annual openings in California and 1,238 awards.
- Between January 1, 2015 and November 30, 2017, the top five employers in San Diego County for this occupation were Human Potential Consultants, General Dynamics, Homeadvisor, Epsilon Systems Solutions Incorporated and Solarcity.
- The typical on-the-job training for this profession is apprenticeship. The typical entry-level education is a high school diploma or equivalent.

Introduction

This report provides labor market information in San Diego County for the following occupational code in the Standard Occupational Classification (SOC)¹ system:

¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. bls.gov/soc.

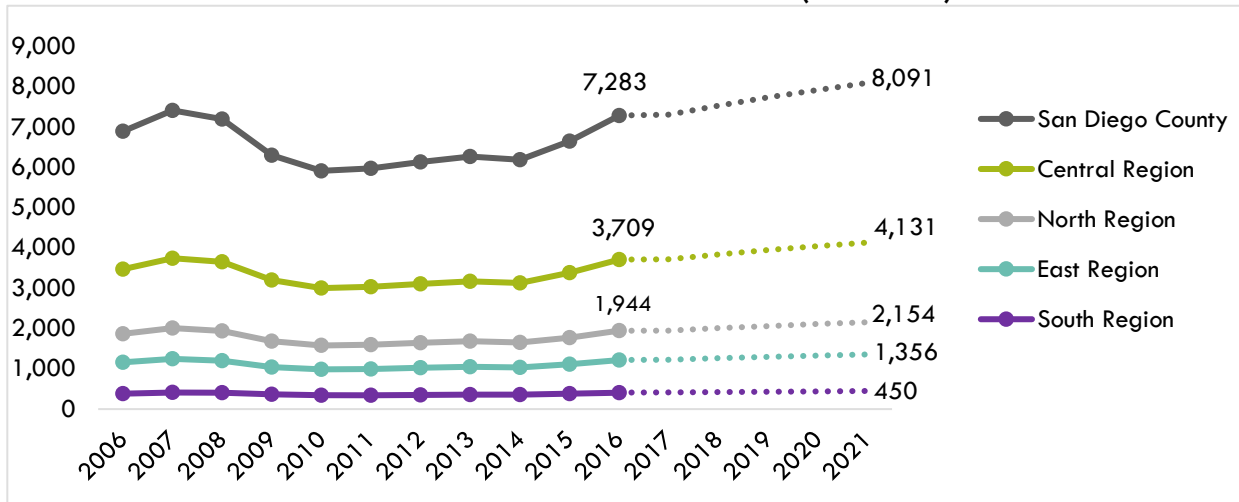
Electricians (SOC 47-2111): Install, maintain and repair electrical wiring, equipment and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems or electrical control systems. Sample reported job titles include:

- Maintenance Electrician
- Maintenance Technician
- Control Electrician
- Mechanical Trades Specialist, Electrician
- Journeyman Electrician
- Chief Electrician
- Industrial Electrician
- Qualified Craft Worker, Electrician (QCW, Electrician)
- Journeyman Wireman
- Inside Wireman

Projected Occupational Demand

Between 2016 and 2021, *Electricians* are projected to increase by **808** jobs (or **11** percent) in San Diego County (Exhibit 1 a and Exhibit 1 b).²

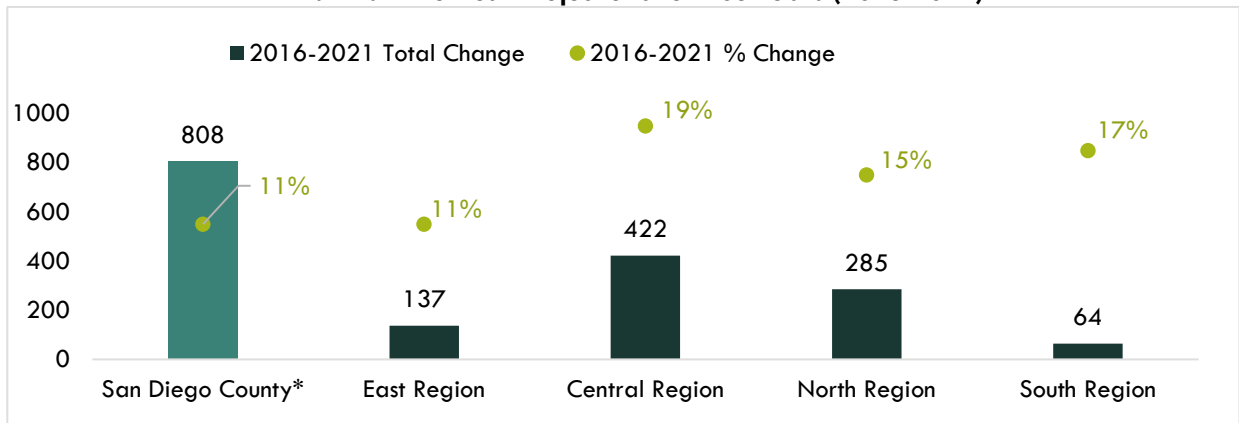
Exhibit 1a: Number of Jobs for Electricians (2006-2021)³



² South, East, Central and North Regions' ZIP codes in this report are defined by the local Workforce Development Board, the San Diego Workforce Partnership.

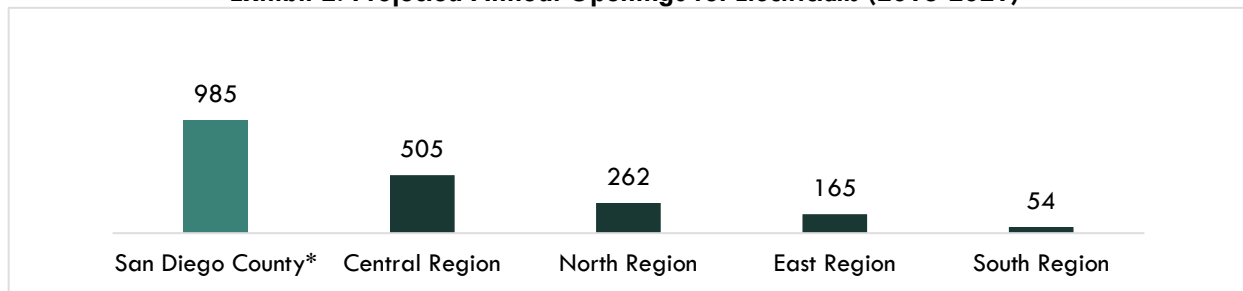
³ EMSI. San Diego County (6073). 2017.03 Class of Worker. QCEW + Non-QCEW+ Self-Employed. 2006-2021.

Exhibit 1b: Five-Year Projections for *Electricians* (2016-2021)⁴



Employers in San Diego County will need to hire **985** workers annually to fill new jobs and backfill jobs due to attrition such as retirement or turnover (Exhibit 2). The most demand will be in the Central Region.

Exhibit 2: Projected Annual Openings for *Electricians* (2016-2021)⁵

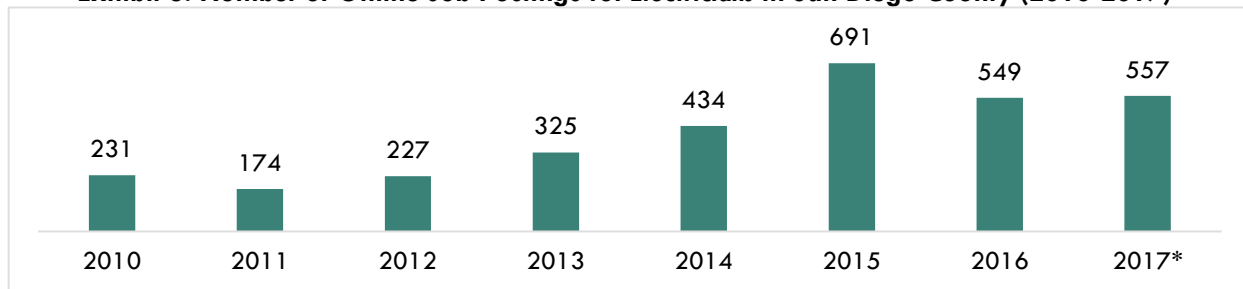


*Total annual openings for the subregions in San Diego County may not add up exactly due to rounding.

Online Job Postings

Between 2010 and 2017, there was an average of **399** online job postings per year for *Electricians* in San Diego County (Exhibit 3).

Exhibit 3: Number of Online Job Postings for *Electricians* in San Diego County (2010-2017)⁶



⁴ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

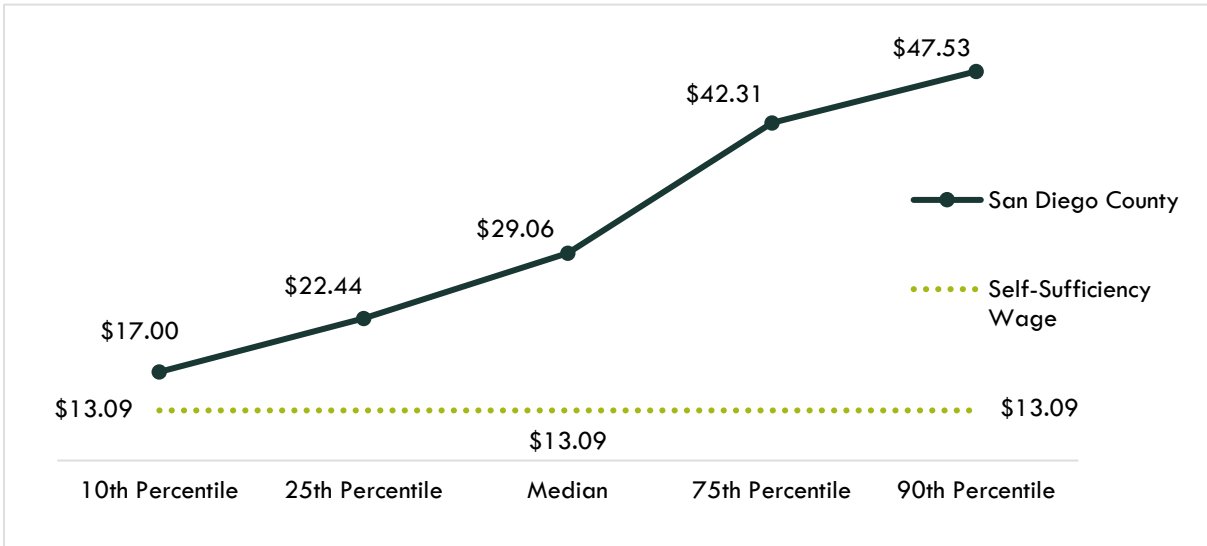
⁵ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

⁶ Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2010, 2011, 2012, 2013, 2014, 2015 and 2016. Jan.-Nov. 2017.

Earnings

Electricians earn median hourly earnings of **\$29.06**, more than the self-sufficiency wage (\$13.09 per hour)⁷ for a single adult in San Diego County (Exhibit 4).

Exhibit 4: Hourly Earnings for Electricians in San Diego County⁸



Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of related program completers/graduates/awards in San Diego County. To determine what programs are available, Exhibit 5 lists the Taxonomy of Programs (TOP) code(s) related to the SOC code analyzed.

Exhibit 5: Related TOP Codes in San Diego County

SOC 47-2111: Electricians

TOP 095220: Electrical

According to the California Community Colleges Chancellor's Office Management Information System (MIS) Data Mart, two colleges supply the region with an annual average of **115** awards for this occupation: **Palomar College and San Diego City College** (Exhibit 6).

⁷ The self-sufficiency wage in San Diego for one adult is \$13.09 (insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california).

⁸ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

Exhibit 6 shows the annual average regional community college awards (associate degrees and certificates) conferred during the three academic years between 2013 and 2016, as well as other awards granted outside the California Community Colleges from 2012 to 2015, with the relevant TOP code.

Please note: An award is not equivalent to a single person in search of a job opening because a student may earn more than one award, such as an associate degree in addition to a certificate.

Exhibit 6: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions by Occupation (Program Year 2012-13 through PY2015-16 Average)

TOP06	TOP06 Title	3-Yr Annual Average Supply (PY13-14 to PY15-16)	3-Yr Annual Average CC Awards (PY13-14 to PY15-16)	Other Educational Institutions 3-Yr Annual Average Awards (PY12-13 to PY14-15)
095220	Electrical	115	115*	0
	<ul style="list-style-type: none"> Palomar College 		73	
	<ul style="list-style-type: none"> San Diego Mesa College 		42	

*Total number of awards may not add up exactly due to rounding.

Demand vs. Supply

Comparing the labor demand (annual openings) with labor supply⁹ (awards from the region's colleges and other postsecondary institutions), there is a supply gap for this occupation in San Diego County, with **985** annual openings and **115** awards. Comparatively, there are **10,034** annual openings in California and **1,238** awards.¹⁰

Exhibit 7: Labor Demand (Annual Openings) Compared to Labor Supply (Average Annual Awards)

Community Colleges and Other Postsecondary Educational Institutions	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego County	985	115 ¹¹	870
California	10,034	1,238 ¹²	8,796

⁹ Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers. For this report, MIS was used for supply.

¹⁰ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

¹¹ EMSI data suggests that the total supply for the region is 120 awards.

¹² EMSI data suggests that the total supply for California is 1,389 awards.

Please note: This is a basic analysis of supply and demand of labor for these occupations. This data should be used to discuss the potential gaps or oversupply of workers for these occupations; however, it should not be the only basis for determining whether or not a program should be developed. Additionally, the data does not include workers who are currently in the labor force who could fill these positions or workers who are not captured by publicly available data.

Student Outcomes

Based on the information available in the CTE LaunchBoard,¹³ students who took courses in the related TOP codes exhibited the following outcomes (Exhibit 8).

**Exhibit 8: Strong Workforce Program Metrics for
TOP 095220 Electrical vs. All Programs in San Diego-Imperial Region (PY2014-15)**

Metric	TOP 095220 Electrical	All Programs
Number of course enrollments ¹⁴	2,709	1,009,712
Number of students who got a degree or certificate ¹⁵	117	17,536
Number of students who transferred ¹⁶	0	6,269
Employed in the second fiscal quarter after exit ¹⁷	85%	66%
Employed in the fourth fiscal quarter after exit ¹⁸	80%	65%
Job closely related to field of study ¹⁹	N/A ²⁰	N/A ²¹
Median earnings in the second fiscal quarter after exit ²²	\$14,003	\$9,134
Median change in earnings ²³	53%	31%
Attained a living wage ²⁴	82%	50%

¹³ calpassplus.org/LaunchBoard/SWP.aspx.

¹⁴ The number of enrollments in courses assigned to the TOP code in the selected year.

¹⁵ The number of unduplicated students who earned a locally-issued certificate, Chancellor's Office approved certificate, associate degree, and/or California Community Colleges bachelor's degree in the selected TOP code

¹⁶ Students who took non-introductory courses or completed a California Community Colleges Chancellor's Office award in the selected TOP code in selected year who subsequently enrolled for the first time in a four-year institution the following year.

¹⁷ Among all exiters with a valid SSN, the percentage who were employed two quarters after exiting California Community Colleges.

¹⁸ Among exiting students with a valid SSN, the percentage who were employed four quarters after exiting California Community Colleges.

¹⁹ Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

²⁰ Data for this metric has not been released for PY2014-15; however, in PY2013-14, the result was 93%.

²¹ Data for this metric has not been released for PY2014-15; however, in PY2013-14, the result was 81%.

²² Among exiting students, the median second-quarter earnings one year after the year in which they exited California Community Colleges.

²³ Among exiting students with a valid SSN, the percentage change in earnings one year before and one year after exiting California Community Colleges.

²⁴ Among completers and skills-builders who exited, the proportion of students who attained a living wage.

Top Employers and Work Locations

Between January 1, 2015 and November 30, 2017, the top five employers in San Diego County for this occupation were **Human Potential Consultants, General Dynamics, Homeadvisor, Epsilon Systems Solutions Incorporated and Solarcity** (Exhibit 9).

Exhibit 9: Top Employers in San Diego County for Electricians

Top Employers	
• Human Potential Consultants	• Naval Facilities Engineering Command
• General Dynamics	• U.S. Marine Corps
• Homeadvisor	• University of California
• Epsilon Systems Solutions Incorporated	• Fleet Readiness Center Southeast Navair Civilian
• Solarcity	• General Atomics

Skills, Education and Certifications

Exhibit 10 indicates the educational attainment for the occupation found currently in the national labor force. The typical on-the-job training for this profession is **apprenticeship**. The typical entry-level education is a **high school diploma or equivalent**.²⁵

Exhibit 10: National Educational Attainment of Electricians

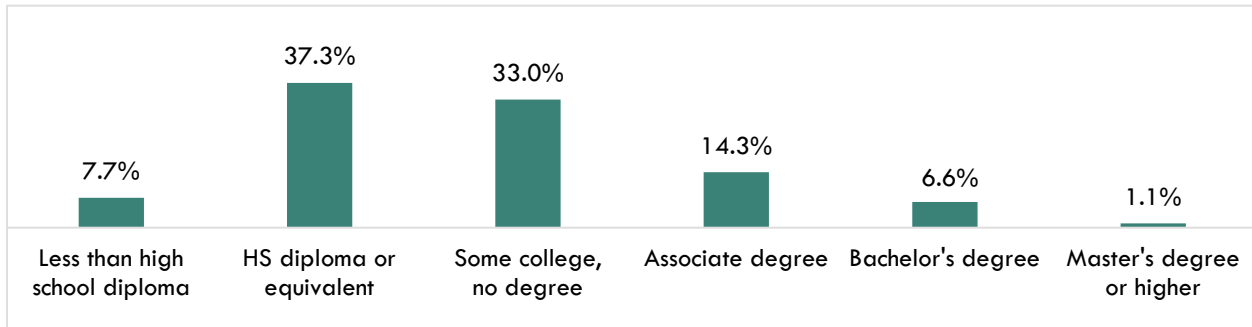


Exhibit 11 lists the top specialized, soft and software skills that appeared in online job postings between January 1, 2015 and November 30, 2017.

²⁵ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

Exhibit 11: Top Skills for *Electricians* in San Diego County²⁶

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Electrical Work • Repair • Electrical Systems • Wiring • Hand Tools 	<ul style="list-style-type: none"> • Troubleshooting • Physical Demand • Communication Skills • Writing • Mathematics 	<ul style="list-style-type: none"> • Microsoft Vista • Microsoft Office • Microsoft Excel • Adobe Acrobat • Adobe Creative Suite

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²⁶ Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2015 and 2016. Jan.-Nov. 2017.