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Electrical and Electronics Repairers, Commercial and Industrial Equipment

Labor Market Analysis: San Diego County

January 2018

Summary

The following list summarizes findings from the labor market analysis below for *Electrical and Electronics Repairers, Commercial and Industrial Equipment*:

- Between 2016 and 2021, *Electrical and Electronics Repairers, Commercial and Industrial Equipment* are projected to increase by 49 jobs (or six percent) in San Diego County.
- Employers in San Diego County will need to hire 21 workers annually to fill new jobs and to backfill jobs due to attrition such as retirement or turnover.
- Between 2010 and 2017, there was an average of 35 online job postings per year for *Electrical and Electronics Repairers, Commercial and Industrial Equipment* in San Diego County.
- *Electrical and Electronics Repairers, Commercial and Industrial Equipment* earn median hourly earnings of $30.07, 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, eight colleges supply the region with an annual average of 887 awards for this occupation: ITT Technical Institute – National City, San Diego Continuing Ed, Imperial Valley College, San Diego City College, Palomar College, Southwestern College, United Education Institute (UEI) – Chula Vista and UEI – San Marcos.
- Comparing the labor market demand against labor supply, there is an oversupply for this occupation in San Diego County, with 78 annual openings and 248 awards. Comparatively, there are 662 annual openings in California and 648 completions.
- Between January 1, 2015 and December 31, 2017, the top five employers in San Diego County for this occupation were Naval Air Systems Command, Thermo Fisher Scientific Inc., Human Potential Consultants, Cobham and National Guard.
- The typical on-the-job training for this profession is long-term training. The typical entry-level education is a post-secondary non-degree award.

Introduction

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

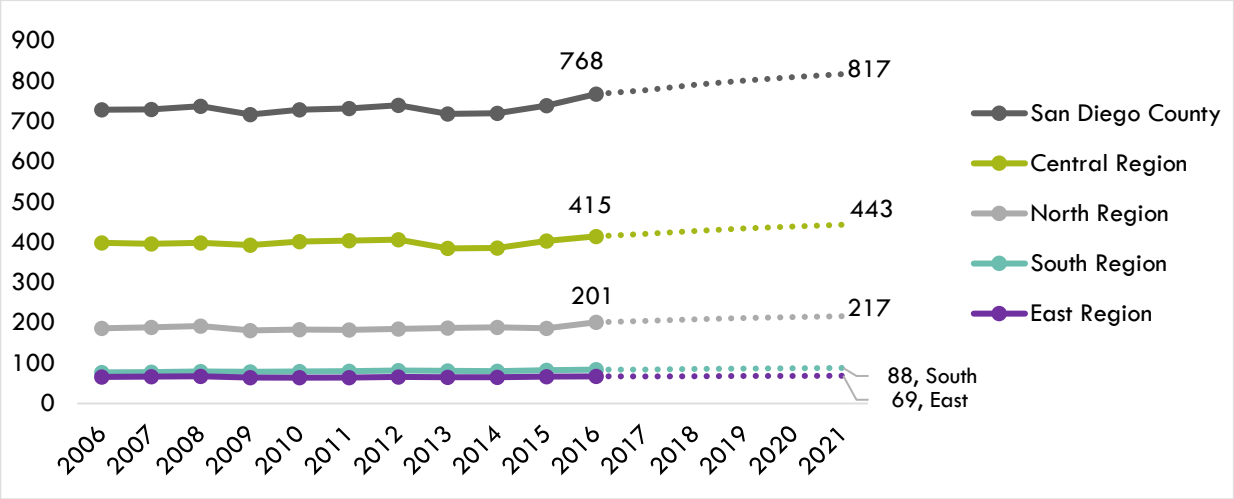
Electrical and Electronics Repairers, Commercial and Industrial Equipment (SOC 49-2094): Repair, test, adjust or install electronic equipment, such as industrial controls, transmitters and antennas. Excludes "Avionics Technicians" (49-2091); "Electronic Equipment Installers and Repairers, Motor Vehicles" (49-2096); and "Electrical and Electronics Installers and Repairers, Transportation Equipment" (49-2093). Sample reported job titles include:

- Electronics Technician
- Technical Support Specialist
- Service Technician
- Scale Technician
- Repair Technician
- Maintenance Technician
- Instrument and Electrical Technician (I&E Tech)
- I&C Tech (Instrument and Control Technician)
- Field Technician
- Electrical Technician

Projected Occupational Demand

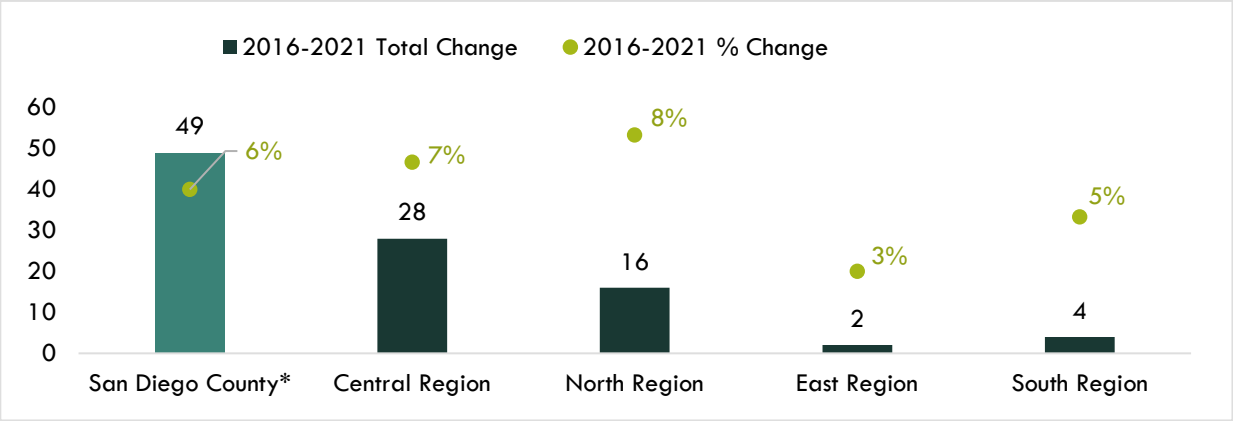
Between 2016 and 2021, *Electrical and Electronics Repairers, Commercial and Industrial Equipment* are projected to increase by 49 jobs (or six percent) in San Diego County (Exhibit 1a and Exhibit 1b).[2]

Exhibit 1a: Number of Jobs for *Electrical and Electronics Repairers, Commercial and Industrial Equipment* (2006-2021)[3]



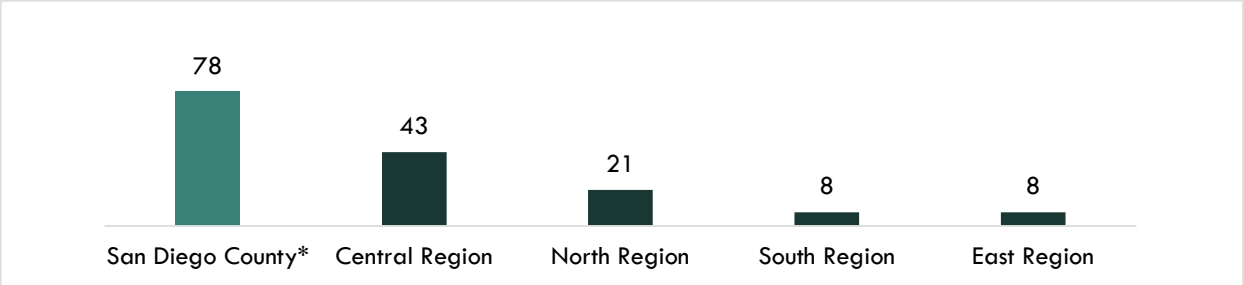
[1] The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. bls.gov/soc.
[2] South, East, Central and North Regions' ZIP codes in this report are defined 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 *Electrical and Electronics Repairers, Commercial and Industrial Equipment* (2016-2021)[4]



Employers in San Diego County will need to hire 78 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 *Electrical and Electronics Repairers, Commercial and Industrial Equipment* (2016-2021)[5]



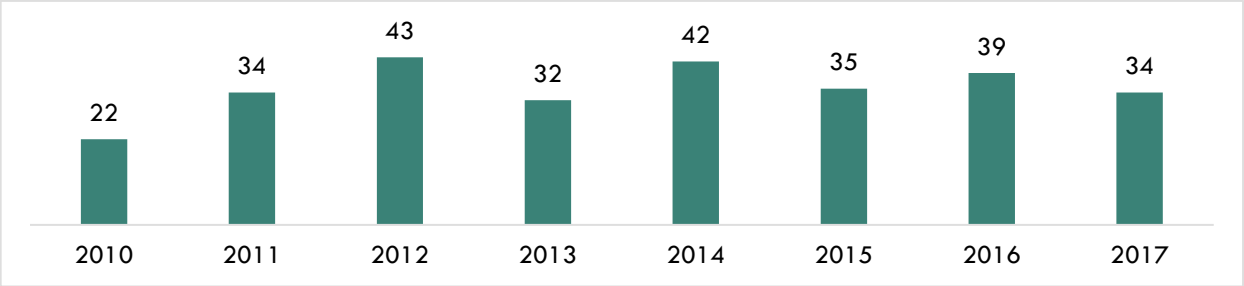
*Total annual openings for the subregions in San Diego County may not add up exactly due to rounding.

Online Job Postings

Between 2010 and 2017, there was an average of 35 online job postings per year for *Electrical and Electronics Repairers, Commercial and Industrial Equipment* in San Diego County (Exhibit 3).

[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.

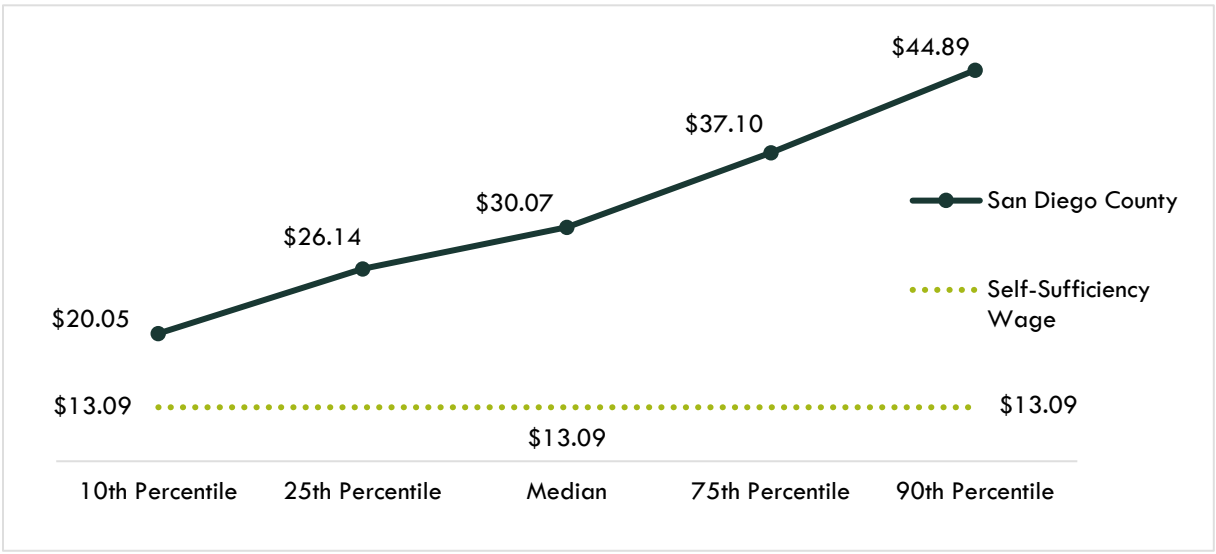
Exhibit 3: Number of Online Job Postings for *Electrical and Electronics Repairers, Commercial and Industrial Equipment* in San Diego County (2010-2017)[6]



Earnings

Electrical and Electronics Repairers, Commercial and Industrial Equipment earn median hourly earnings of $30.07, 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 *Electrical and Electronics Repairers, Commercial and Industrial Equipment* in San Diego County[8]



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.

[6] Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2010, 2011, 2012, 2013, 2014, 2015, 2016, and 2017.
[7] The self-sufficiency wage in San Diego for one adult is $13.09 (insightcced.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 5: Related TOP Codes in San Diego County

SOC 49-2094: Electrical and Electronics Repairers, Commercial and Industrial Equipment
TOP 093400: Electronics and Electric Technology
TOP 093410: Computer Electronics
TOP 093420: Industrial Electronics
TOP 094500: Industrial Systems Technology and Maintenance
TOP 095600: Manufacturing and Industrial Technology

According to the California Community Colleges Chancellor's Office Management Information System (MIS) Data Mart, eight colleges supply the region with an annual average of 887 awards for this occupation: ITT Technical Institute – National City, San Diego Continuing Ed, Imperial Valley College, San Diego City College, Palomar College, Southwestern College, United Education Institute (UEI) – Chula Vista and UEI – San Marcos (Exhibit 6).

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)
093400	Electronics and Electric Technology	**205**	**113**	**93**
	• ITT Technical Institute – National City			93
	• San Diego Continuing Ed		88	
	• Imperial Valley College		16	
	• San Diego City College		8	
093410	Computer Electronics	**32**	**9**	**23**

	• Palomar College		0	
	• San Diego City College		7	
	• Southwestern College		2	
	• United Education Institute – Chula Vista			14
	• United Education Institute – San Marcos			9
093420	Industrial Electronics	**2**	**2**	**0**
	• Imperial Valley College		2	
094500	Industrial Systems Technology and Maintenance	**0**	**0**	**0**
095600	Manufacturing and Industrial Technology	**9**	**9**	**0**
	• San Diego Continuing Education		1	
	• San Diego City College		8	
	TOTAL	**248**		

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

Demand vs. Supply

Comparing the labor demand (annual openings) with labor supply[9] from the region's community colleges, there is an oversupply for this occupation in San Diego County, with 78 annual openings and 248 awards. Comparatively, there are 662 annual openings in California and 648 completions.[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	78	248	**170**
California	662	648	**14**

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

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

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,[11] students who took courses in the related TOP codes exhibited the following outcomes (Exhibit 8).

Exhibit 8: Strong Workforce Program Metrics for *TOP 093400 Electronics Electric Technology, TOP 093410 Computer Electronics, TOP 093420 Industrial Electronics, and TOP 095600 Manufacturing & Industrial Technology* vs. All Programs in San Diego-Imperial Region (PY2014-15)

Metric	TOP 093400 Electronics & Electric Technology	TOP 093410 Computer Electronics	TOP 093420 Industrial Electronics	TOP 095600 Manufacturing & Industrial Technology	All Programs
Number of course enrollments[12]	1,152	N/A	6	152	1,009,712
Number of students who got a degree or certificate[13]	93	9	5	5	17,536
Number of students who transferred[14]	7	N/A[15]	N/A[16]	1	6,269
Employed in the second fiscal quarter after exit[17]	70%	N/A[18]	N/A[19]	89%	66%
Employed in the fourth fiscal quarter after exit[20]	68%	N/A[21]	N/A[22]	89%	65%

[11] calpassplus.org/LaunchBoard/SWP.aspx.
[12] The number of enrollments in courses assigned to the TOP code in the selected year
[13] 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.
[14] Students who took non-introductory courses or completed a California Community CollegesChancellor'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.
[15] There are insufficient data to calculate this metric.
[16] There are insufficient data to calculate this metric.
[17] Among all exiters with a valid SSN, the percentage who were employed two quarters after exiting California Community Colleges.
[18] There are insufficient data to calculate this metric.
[19] There are insufficient data to calculate this metric.
[20] Among exiting students with a valid SSN, the percentage who were employed four quarters after exiting California Community Colleges
[21] There are insufficient data to calculate this metric.
[22] There are insufficient data to calculate this metric.

Job closely related to field of study[23]	N/A[24]	N/A[25]	N/A[26]	N/A[27]	N/A[28]
Median earnings in the second fiscal quarter after exit[29]	$8,470	N/A[30]	N/A[31]	$14,731	$9,134
Median change in earnings[32]	26%	N/A[33]	N/A[34]	32%	31%
Attained a living wage[35]	58%	N/A[36]	N/A[37]	94%	50%

Top Employers and Work Locations

Between January 1, 2015 and December 31, 2017, the top five employers in San Diego County for this occupation were Naval Air Systems Command, Thermo Fisher Scientific Inc., Human Potential Consultants, Cobham, and National Guard (Exhibit 9).

Exhibit 9: Top Industries and Employers in San Diego County for *Electrical and Electronics Repairers, Commercial and Industrial Equipment*

Top Employers	Top Industries
• Naval Air Systems Command • Thermo Fisher Scientific Inc • Human Potential Consultants • Cobham • National Guard	• National Security and International Affairs • Navigational, Measuring, Electromedical, and Control Instruments Manufacturing • Commercial and Service Industry Machinery Manufacturing • Elementary and Secondary Schools • Junior Colleges

[23] Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study
[24] Data for this metric has not been released for PY2014-15; in PY2013-14, there were fewer than three students, so this metric has been suppressed.
[25] Data for this metric has not been released for PY2014-15; in PY2013-14, there were fewer than three students, so this metric has been suppressed.
[26] Data for this metric has not been released for PY2014-15; in PY2013-14, there were fewer than three students, so this metric has been suppressed.
[27] Data for this metric has not been released for PY2014-15;, in PY2013-14, there were fewer than three students, so this metric has been suppressed.
[28] Data for this metric has not been released for PY2014-15; however, in PY2013-14, the result was 81%.
[29] Among exiting students, the median second quarter earnings one year after the year in which they exited California Community Colleges.
[30] There are insufficient data to calculate this metric.
[31] There are insufficient data to calculate this metric.
[32] Among exiting students with a valid SSN, the percentage change in earnings one year before and one year after exiting the California community college system.
[33] There are insufficient data to calculate this metric.
[34] There are insufficient data to calculate this metric.
[35] Among completers and skills-builders who exited, the proportion of students who attained a living wage.
[36] There are insufficient data to calculate this metric.
[37] There are insufficient data to calculate this metric.

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 occupation is long-term on-the-job training. The typical entry-level education is a postsecondary non-degree award.[38]

Exhibit 10: National Educational Attainment of *Electrical and Electronics Repairers, Commercial and Industrial Equipment*

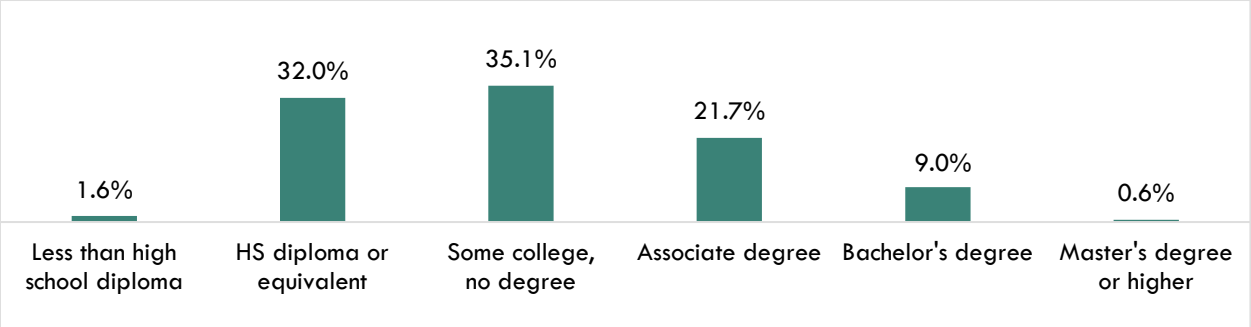


Exhibit 11 lists the top specialized, soft and software skills that appeared in online job postings between January 1, 2015 and December 31, 2017.

Exhibit 11: Top Skills for *Electrical and Electronics Repairers, Commercial and Industrial Equipment* in San Diego County[39]

Specialized Skills	Soft Skills	Software Skills
• Repair	• Troubleshooting	• Microsoft Office
• Equipment Repair	• Communication Skills	• SAP
• Inspection	• Mathematics	• Microsoft Excel
• Hand Tools	• Physical Demand	• Microsoft Word
• Oscilloscopes	• Problem Solving	• Microsoft Windows

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[38] EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.
[39] Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2015, 2016 and 2017.