

Electrical Technology Occupation Report

CIP 46.0302

Cochise, Pima, SC

Electrician

CIP 2010: A program that prepares individuals to apply technical knowledge and skills to install, operate, maintain, and repair electric apparatus and systems such as residential, commercial, and industrial electric-power wiring; and DC and AC motors, controls, and electrical distribution panels. Includes instruction in the principles of electronics and electrical systems, wiring, power transmission, safety, industrial and household appliances, job estimation, electrical testing and inspection, and applicable codes and standards.

* Program Description – Settings

Occupation Gender Breakdown

Gender	2016 Jobs	2016 Percent
Males	3,666	96.6%
Females	128	3.4%

Occupation Age Breakdown

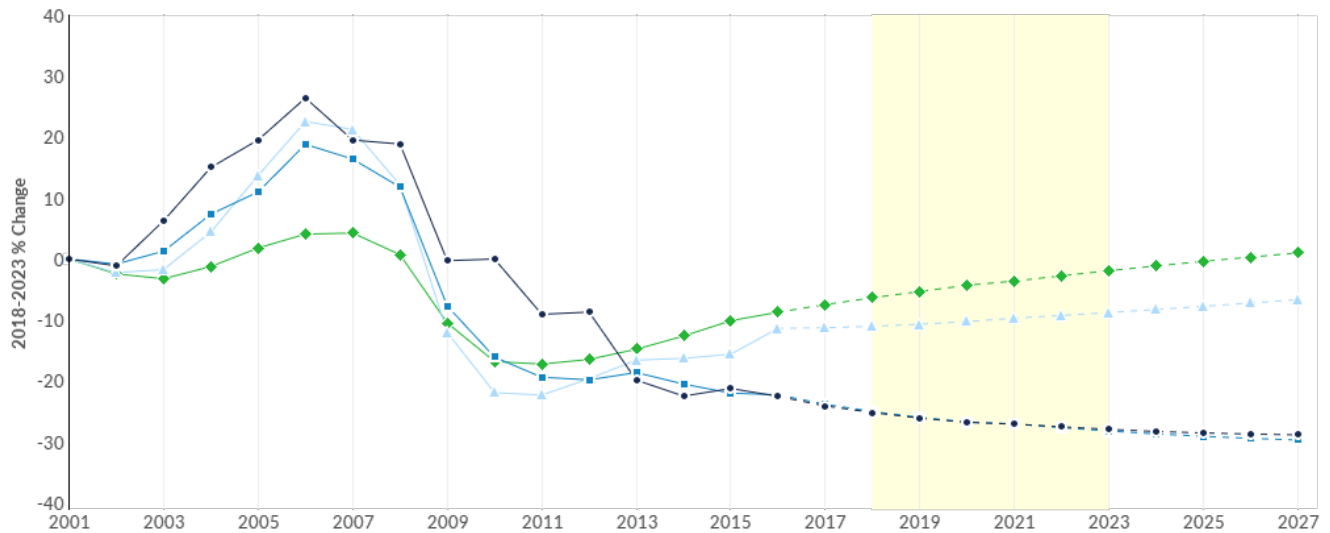
Age	2016 Jobs	2016 Percent
14-18	8	0.2%
19-24	163	4.3%
25-34	676	17.8%
35-44	943	24.8%
45-54	1,002	26.4%
55-64	812	21.4%
65+	190	5.0%

Occupation Summary for CIP 46.0302

<p>3,794</p> <p>Jobs (2016)</p> <p>15% below National average</p>	<p>-4.3%</p> <p>% Change (2018-2023)</p> <p>Nation: 4.7%</p>	<p>\$22.08/hr</p> <p>Median Hourly Earnings</p> <p>Nation: \$25.35/hr</p>
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October 10, 2017

Occupation Change Summary



	Region	2018 Jobs	2023 Jobs	Change	% Change	Median Hourly Earnings
●	Cochise County, AZ	335	323	-12	-4%	\$19.21
●	Cochise, Pima, SC	3,660	3,504	-156	-4%	\$22.08
●	Arizona (AZ)	30,404	31,173	769	3%	\$24.29
●	United States	1,535,837	1,608,666	72,829	5%	\$25.35

SOC	Description	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	High school diploma or equivalent	5 years or more	None
47-2111	Electricians	High school diploma or equivalent	None	Apprenticeship
47-3013	Helpers--Electricians	High school diploma or equivalent	None	Short-term on-the-job training
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	Postsecondary non-degree award	None	Long-term on-the-job training
49-2098	Security and Fire Alarm Systems Installers	High school diploma or equivalent	None	Moderate-term on-the-job training
49-9097	Signal and Track Switch Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training

Occupation Breakdown - 2018 Jobs

Occupation	Description	Cochise County, AZ	Cochise, Pima, SC	Arizona (AZ)	United States
47-2111	Electricians	203	1,543	12,454	702,245
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	117	1,774	14,640	647,396
47-3013	Helpers--Electricians	<10	79	679	77,946
49-2098	Security and Fire Alarm Systems Installers	<10	148	1,916	74,484
49-9097	Signal and Track Switch Repairers	<10	25	114	10,211
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	<10	92	601	23,554
	Total	335	3,660	30,404	1,535,837

Occupation Breakdown - 2023 Jobs

47-2111	Electricians	193	1,506	13,167	746,155
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	115	1,651	14,416	664,907
47-3013	Helpers--Electricians	<10	77	753	83,973
49-2098	Security and Fire Alarm Systems Installers	<10	148	2,063	79,487
49-9097	Signal and Track Switch Repairers	<10	25	122	10,458
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	<10	96	652	23,687
	Total	323	3,504	31,173	1,608,666

Occupation Breakdown – Change

Occupation	Description	Cochise County, AZ	Cochise, Pima, SC	Arizona (AZ)	United States
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	--	4	51	133
47-3013	Helpers--Electricians	--	-2	74	6,027
49-2098	Security and Fire Alarm Systems Installers	--	0	147	5,003
49-9097	Signal and Track Switch Repairers	--	0	8	247
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	-2	-123	-224	17,511
47-2111	Electricians	-10	-37	713	43,910
	Total	-12	-156	769	72,829

Occupation Breakdown - Median Hourly Earnings

Occupation	Description	Cochise County, AZ	Cochise, Pima, SC	Arizona (AZ)	United States
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	--	\$37.39	\$40.91	\$36.38
49-9097	Signal and Track Switch Repairers	--	\$34.57	\$34.68	\$31.42
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$29.52	\$25.93	\$28.21	\$30.28
49-2098	Security and Fire Alarm Systems Installers	--	\$15.86	\$25.00	\$20.92
47-2111	Electricians	\$17.61	\$18.97	\$22.76	\$24.12
47-3013	Helpers--Electricians	--	\$11.26	\$11.09	\$14.20
	Total	\$21.83	\$22.63	\$25.71	\$26.33








Top Industries – Change from 2018-2023

NAICS Code	Description	Cochise County, AZ	Cochise, Pima, SC	Arizona (AZ)	United States
237110	Water and Sewer Line and Related Structures Construction	2	0	16	835
236118	Residential Remodelers	1	1	95	2,206
901199	Federal Government, Civilian, Excluding Postal Service	0	2	3	-123
236220	Commercial and Institutional Building Construction	0	-25	34	3,041
238210	Electrical Contractors and Other Wiring Installation Contractors	-12	-65	652	47,252
	Total	-9	-86	800	53,212

Source: QCEW Employees, Non-QCEW Employees & Self-Employed - Emsi 2017.3 Class of Worker








National Educational Attainment

First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)

Education Level	2016 Percent
Less than high school diploma	13.7% 
High school diploma or equivalent	42.0% 
Some college, no degree	25.8% 
Associate's degree	7.0% 
Bachelor's degree	9.6% 
Master's degree	1.4% 
Doctoral or professional degree	0.4% 








* National Educational Attainment - Settings

National Educational Attainment
Electricians (47-2111)

	Education Level	2016 Percent
●	Less than high school diploma	7.7% 
●	High school diploma or equivalent	37.3% 
●	Some college, no degree	33.0% 
●	Associate's degree	14.3% 
●	Bachelor's degree	6.6% 
●	Master's degree	0.8% 
●	Doctoral or professional degree	0.2% 








* National Educational Attainment – Settings

National Educational Attainment
Security and Fire Alarm Systems Installers (49-2098)

	Education Level	2016 Percent
●	Less than high school diploma	7.3% 
●	High school diploma or equivalent	36.7% 
●	Some college, no degree	34.7% 
●	Associate's degree	12.5% 
●	Bachelor's degree	8.3% 
●	Master's degree	0.4% 
●	Doctoral or professional degree	0.1% 

* National Educational Attainment – Settings








National Educational Attainment
Helpers--Electricians (47-3013)

	Education Level	2016 Percent
●	Less than high school diploma	43.9% 
●	High school diploma or equivalent	36.0% 
●	Some college, no degree	11.5% 
●	Associate's degree	4.3% 
●	Bachelor's degree	4.0% 
●	Master's degree	0.4% 
●	Doctoral or professional degree	0.0% 

* National Educational Attainment - Settings

National Educational Attainment








Electrical and Electronics Repairers, Powerhouse, Substation, and Relay (49-2095)

	Education Level	2016 Percent
●	Less than high school diploma	1.6% 
●	High school diploma or equivalent	32.0% 
●	Some college, no degree	35.1% 
●	Associate's degree	21.7% 
●	Bachelor's degree	9.0% 
●	Master's degree	0.6% 
●	Doctoral or professional degree	0.0% 

* National Educational Attainment - Settings

National Educational Attainment

Signal and Track Switch Repairers (49-9097)

	Education Level	2016 Percent
●	Less than high school diploma	14.1% 
●	High school diploma or equivalent	40.6% 
●	Some college, no degree	25.2% 
●	Associate's degree	9.8% 
●	Bachelor's degree	8.8% 
●	Master's degree	1.3% 
●	Doctoral or professional degree	0.2% 

* National Educational Attainment - Settings

Appendix A - Data Sources and Calculations

Location Quotient

Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

Occupation Data

EMSI occupation employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry.

Completers Data

The completers data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Institution Data

The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Industry Data

EMSI industry data have various sources depending on the class of worker. (1) For QCEW Employees, EMSI primarily uses the QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns and Current Employment Statistics. (2) Non-QCEW employees data are based on a number of sources including QCEW, Current Employment Statistics, County Business Patterns, BEA State and Local Personal Income reports, the National Industry-Occupation Employment Matrix (NIOEM), the American Community Survey, and Railroad Retirement Board statistics. (3) Self-Employed and Extended Proprietor classes of worker data are primarily based on the American Community Survey, Nonemployer Statistics, and BEA State and Local Personal Income Reports. Projections for QCEW and Non-QCEW Employees are informed by NIOEM and long-term industry projections published by individual states.

Staffing Patterns Data

The staffing pattern data in this report are compiled from several sources using a specialized process. For QCEW and Non-QCEW Employees classes of worker, sources include Occupational Employment Statistics, the National Industry-Occupation Employment Matrix, and the American Community Survey. For the Self-Employed and Extended Proprietors classes of worker, the primary source is the American Community Survey, with a small amount of information from Occupational Employment Statistics.

State Data Sources

This report uses state data from the following agencies: Arizona Department of Administration, Office of Employment and Population Statistics