

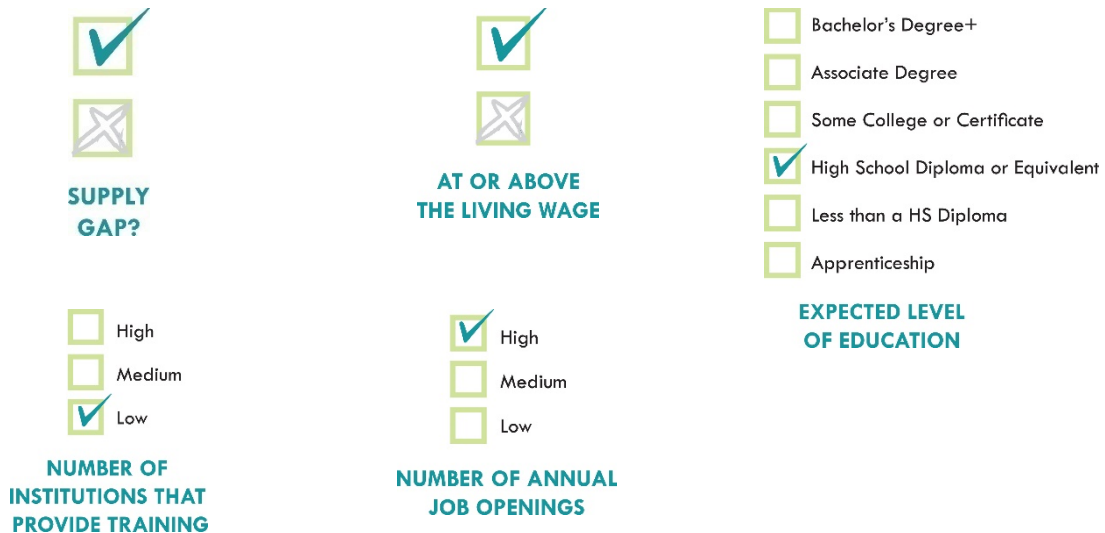
# Solar Photovoltaic Installers

## Labor Market Analysis: Imperial County

September 2019

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### Summary



The brief provides labor market information about *Solar Photovoltaic Installers* to assist the San Diego and Imperial Counties Community Colleges with program development, strategic planning, etc. According to available labor market information, *Solar Photovoltaic Installers* have a labor market demand of 19 annual job openings, while average demand for an occupation in Imperial County is four annual job openings. No educational institutions in Imperial County supply awards for this occupation, suggesting that there is a supply gap. Comparatively, there are 958 annual openings in California and 162 awards. This occupation's entry-level wages are above the living wage. According to the California Community Colleges' outcomes data, 55 percent of students who complete programs related to *Solar Photovoltaic Installers* earned a living wage in California, compared to 58 percent of students who complete Career Education programs in general. Additionally, the typical entry-level education for *Solar Photovoltaic Installers* is a high school diploma or equivalent.

## Introduction

This report provides labor market information (LMI) in Imperial County for the following occupational code in the Standard Occupational Classification (SOC)<sup>1</sup> system:

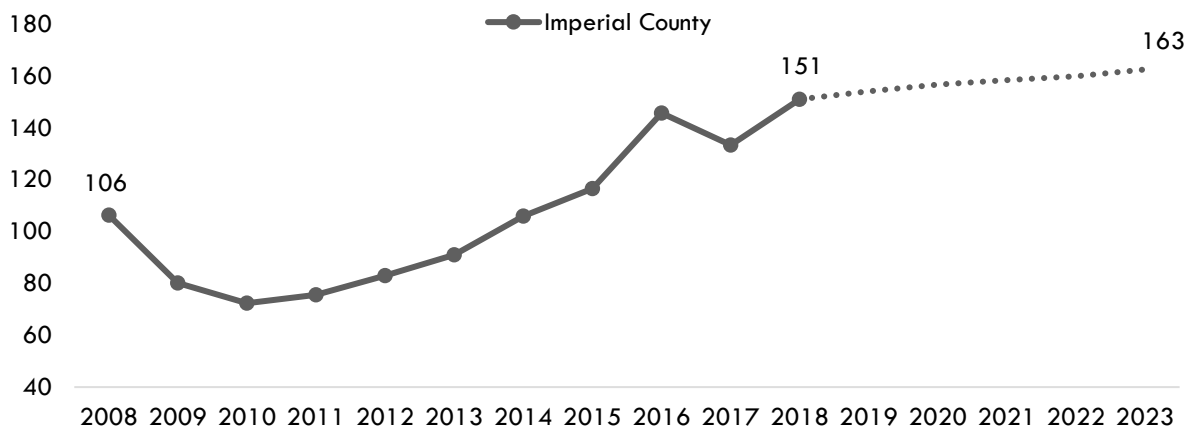
**Solar Photovoltaic Installers (SOC 47-2231):** Assemble, install, or maintain solar photovoltaic (PV) systems on roofs or other structures in compliance with site assessment and schematics. May include measuring, cutting, assembling, and bolting structural framing and solar modules. May perform minor electrical work such as current checks. Sample reported job titles include:

- Solar Technician
- Photovoltaic Installer
- Solar Tech
- Solar Installer Technician
- Solar Installer PV
- Solar Installation Helper
- Solar Designer/Installer
- PV Installer Tech

## Projected Occupational Demand

Between 2018 and 2023, *Solar Photovoltaic Installers* are projected to increase by 12 net jobs or eight percent (Exhibit 1). Employers in Imperial County will need to hire 19 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

**Exhibit 1: Number of Jobs for Solar Photovoltaic Installers (2008-2023)<sup>2</sup>**



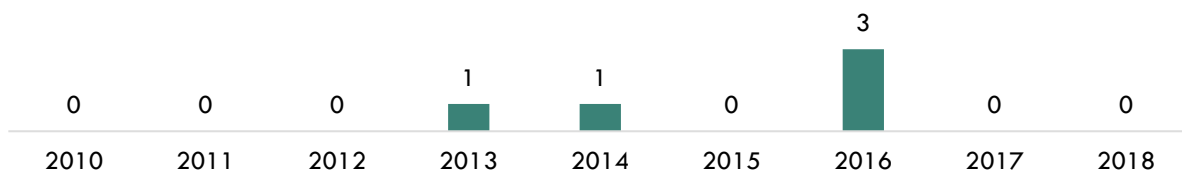
<sup>1</sup> The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc/).

<sup>2</sup> Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

## Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market demand that are not captured by historical data. Between 2010 and 2018, there was an average of **one** online job posting per year for *Solar Photovoltaic Installers* in Imperial County (Exhibit 2).

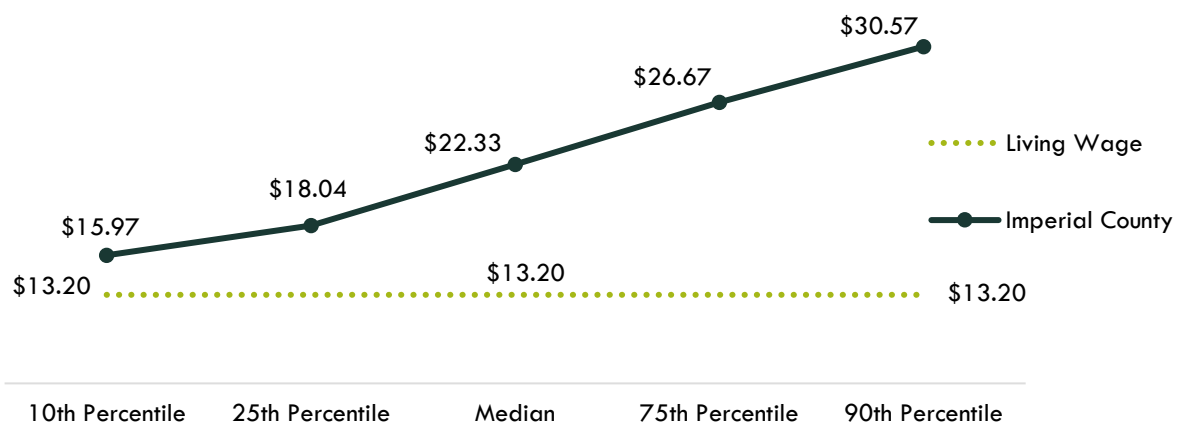
**Exhibit 2: Number of Online Job Postings for Solar Photovoltaic Installers in Imperial County (2010-2018)<sup>3</sup>**



## Earnings

*Solar Photovoltaic Installers* receive median hourly earnings of **\$22.33**; this is more than the living wage for two adults and two children (school-age) in Imperial County, which is **\$13.20** per hour (Exhibit 3).<sup>4</sup>

**Exhibit 3: Hourly Earnings<sup>5</sup> for Solar Photovoltaic Installers in Imperial County<sup>6</sup>**



<sup>3</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2018.

<sup>4</sup> "California Family Needs Calculator (formerly the Self-Sufficiency Standard)," Insight: Center for Community Economic Development, last updated 2018. [insightccd.org/2018-self-sufficiency-standard](https://insightccd.org/2018-self-sufficiency-standard).

<sup>5</sup> 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

<sup>6</sup> Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

## Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.<sup>7</sup> There are **two** TOP codes and **three** CIP codes related to *Solar Photovoltaic Installers* (Exhibit 4).

**Exhibit 4: Related TOP and CIP Codes for Solar Photovoltaic Installers**

<i>Solar Photovoltaic Installers</i>	
TOP 094610:	Energy Systems Technology
TOP 095290:	Roofing
CIP 15.0503:	Energy Management and Systems Technology/Technician
CIP 15.0505:	Solar Energy Technology/Technician
CIP 46.0410:	Roofer

According to TOP and CIP data, **no** educational institution supplies the region with awards for this occupation (Exhibit 5).

**Exhibit 5: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2013-14 through PY2016-17 Average)**

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY14-15 to PY16-17)	Other Educational Institutions 3-Yr Annual Average Awards (PY13-14 to PY15-16)	3-Yr Total Average Supply (PY13-14 to PY16-17)
094610	Energy Systems Technology	0	0	0
095290	Roofing	0	0	0
15.0503	Energy Management and Systems Technology/Technician	0	0	0
15.0505	Solar Energy Technology/Technician	0	0	0
46.0410	Roofer	0	0	0
			<b>Total</b>	<b>0</b>

<sup>7</sup> TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart ([datamart.cccco.edu](http://datamart.cccco.edu)) and CIP data comes from the Integrated Postsecondary Education Data System ([nces.ed.gov/ipeds/use-the-data](http://nces.ed.gov/ipeds/use-the-data)).

## Demand vs. Supply

Comparing labor demand (annual openings) with labor supply<sup>8</sup> suggests that there is a **supply gap** for this occupation in Imperial County, with **19** annual openings and **zero** awards. Comparatively, there are **958** annual openings in California and **162** awards<sup>9</sup> (Exhibit 6).

**Exhibit 6: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)**

Community Colleges and Other Postsecondary Educational Institutions	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or <b>OverSupply</b>
Imperial	19	0	<b>19</b>
California	958	162	<b>796</b>

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

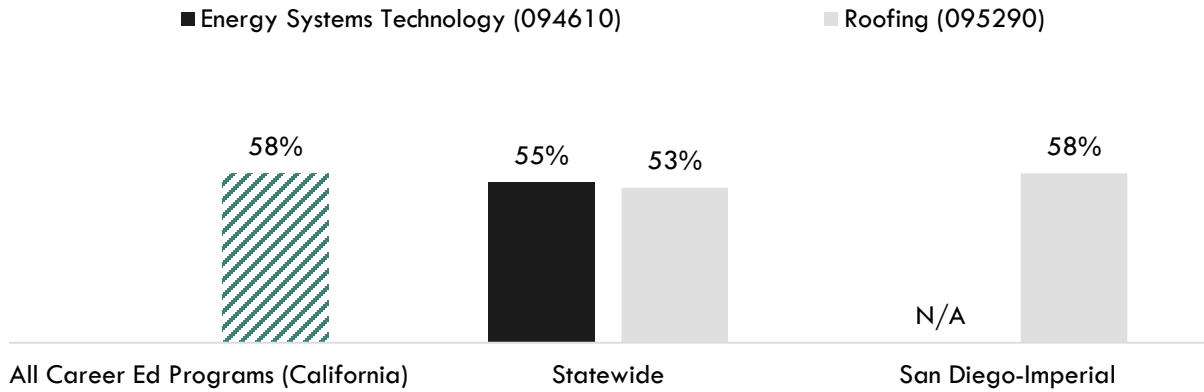
## Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, between 53 and 55 percent of students earned a living wage in programs related to *Interpreters and Translators*, compared to 58 percent of students who earned a living wage in Career Education programs across the state (Exhibit 7a).

<sup>8</sup> 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.

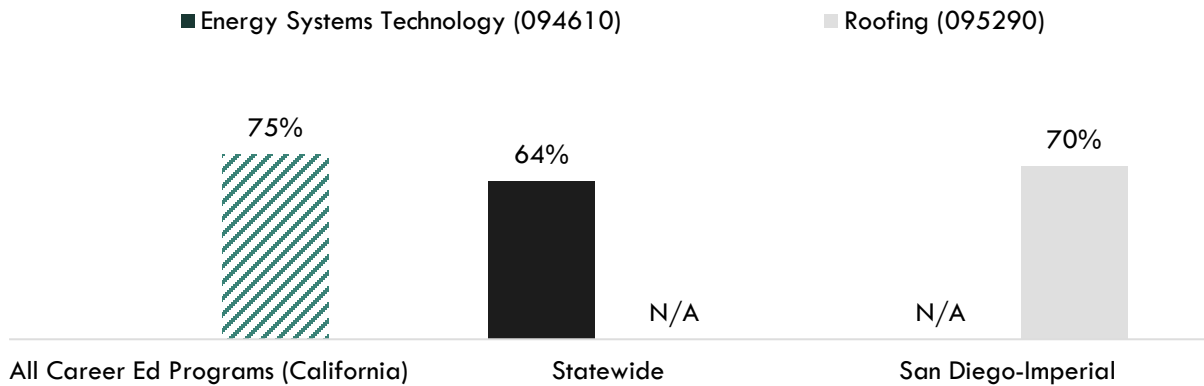
<sup>9</sup> "Supply and Demand," Centers of Excellence Student Outcomes, [coecc.net/Supply-and-Demand.aspx](http://coecc.net/Supply-and-Demand.aspx).

**Exhibit 7a: Proportion of Students Who Earned a Living Wage, PY2015-16<sup>10</sup>**



According to the California Community Colleges LaunchBoard, 75 percent of students in Career Education statewide obtained a job closely related to their field of study compared to 64 percent of students from Energy Systems Technology (094610) across the state and 70 percent from Roofing (095290) in the San Diego-Imperial region (Exhibit 7b).

**Exhibit 7b: Percentage of Students in a Job Closely Related to Field of Study, PY2014-15<sup>11</sup>**



## Top Employers and Work Locations

There was insufficient data for Imperial County to determine the top employers for *Solar Photovoltaic Installers* between January 1, 2016 and December 31, 2018 (Exhibit 8).

<sup>10</sup> Among completers and skills builders who exited, the proportion of students who attained a living wage.

<sup>11</sup> Most recent year with available data is Program Year 2014-15. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

**Exhibit 8: Top Employers in Imperial County for Solar Photovoltaic Installers<sup>12</sup>**

Top Employers
<ul style="list-style-type: none"> <li>N/A (Insufficient Data)</li> </ul>

**Skills, Education, and Certifications**

Exhibit 9 indicates the educational attainment for the occupation found currently in the national labor force. The typical on-the-job training for this profession is moderate-term on-the-job training. The typical entry-level education is a high school diploma or equivalent.<sup>13</sup>

**Exhibit 9: National Educational Attainment of Solar Photovoltaic Installers<sup>14</sup>**

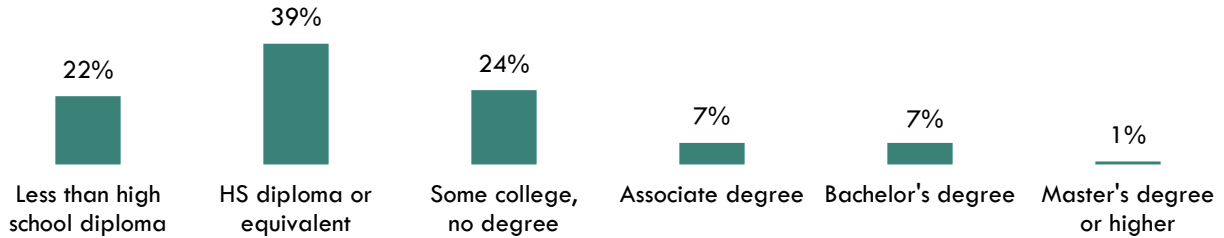


Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2016 and December 31, 2018.

**Exhibit 10: Top Skills for Solar Photovoltaic Installers in Imperial County<sup>15</sup>**

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> <li>Hand Tools</li> <li>Materials Transport</li> <li>Solar Installation</li> <li>Tool Sockets</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

<sup>12</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2016-2018.

<sup>13</sup> Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

<sup>14</sup> "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified October 18, 2018. [bls.gov/emp/tables/educational-attainment.htm](https://bls.gov/emp/tables/educational-attainment.htm).

<sup>15</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2016-2018.

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### **Important Disclaimers**

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.