ROOFTOP SOLAR CREATES JOBS IN SACRAMENTO

Al Rich & Lee Miller
Dec 12, 2019
The solar energy industry is growing rapidly, creating new jobs and businesses across the nation.

76,838 Solar Jobs in California in 2018

State Ranking: California ranks #1 for Solar Jobs compared to other states

State Ranking: California ranks #3 for Solar Jobs per Capita to other states

Projected Job Growth in California in 2019: 6.7%

Source: The Solar Foundation, California Solar Job Census 2018
California ranked #1 for installed Solar Capacity in 2018
- 24,464 MW Cumulative installed Solar Capacity
- Enough Solar to power 6,368,607 homes
- 19.02% of the state’s electricity generation for Solar
- 2807 Solar Companies
- 1947 k-12 solar schools
  - 14.5% K-12 have gone solar
- 2019 reached goal of 1M rooftop solar on homes in CA

Source: The Solar Foundation, California Solar Job Census 2018
STATE POLICIES: A KEY DRIVER FOR LOCAL GROWTH

Statewide policies are critical to driving local solar industry growth. One such example is California, which has historically implemented solar-friendly policies, helping the state become the largest solar market in the U.S. In 2018, California lawmakers passed a rooftop solar mandate for new homes, which is estimated to lead to a 14% increase in total U.S. solar sales over the next four years, supporting thousands of jobs. Additionally, in September 2018, SB 100 was passed, committing the state to 100% carbon-free energy by 2045.

Illinois has also adopted new policies as a follow up to the 2016 passage of the Future Energy Jobs Act. These include a 25% renewable portfolio standard (RPS) and an Adjustable Block Program (ABP). The ABP, which mandates that 25% of installed capacity come from community solar projects, will fuel the growth of the non-residential market, which is already expected to reach 129 MW by the end of 2020.

After a long wait, Nevada reinstated its net metering program in the summer of 2017 to boost the rooftop solar market. Nevada midterm voters also passed a ballot initiative to increase the state’s RPS to 50% by 2030, which will further boost the state’s solar market. In Florida, state regulators finally allowed solar leasing for residential customers; the state has seen a 62% increase in residential capacity since 2017.
Solar employment grew about six times faster than the overall U.S. economy from 2013-2018.

**SOLAR JOBS COMPARED TO OTHER ENERGY INDUSTRIES** The solar industry ranks third in total employment among energy industries, behind only petroleum and natural gas.

The solar workforce is over twice as large as the coal industry and almost five times as large as the nuclear energy industry workforce.

The rapid expansion of solar energy means that more workers are required to install new systems as well as maintain existing installations.
TYPES OF OCCUPATIONS

- Comparing employment by occupational category rather than by industry sector,
  - 32% of all solar employment is reported to be in administrative, management, and professional positions.
  - 38% of jobs were found to be in installation and repair positions.
  - As more solar systems are installed and begin to age, the importance of Operations & Maintenance will grow.
- 7% were in manufacturing positions
- 15% were in sales position

![Table showing solar workers by occupational category](image-url)
“Other” category include

- Academic Research
- Government oversight
- Research & Development
- Training
- Nonprofits
- Finance
- Engineering
- Consulting
- Law
- Communications

Figure 14: Solar “Other” Employment Growth, 2010-2019
MOST SOLAR COMPANIES ARE SMALL BUSINESSES

LOCATION SIZE BY NUMBER OF PERMANENT EMPLOYEES

- 1 to 5 employees: 29.9%
- 6 to 10 employees: 13.7%
- 11 to 24 employees: 15.0%
- 25 to 49 employees: 18.6%
- 50 to 99 employees: 8.7%
- 100 to 249 employees: 7.5%
- 250 to 499 employees: 3.8%
- 500 employees or more: 2.9%

Figure 6

NATIONAL SOLAR JOBS CENSUS 2018 //
JOB LOCATIONS IN CALIFORNIA

- Field staff: about two-thirds of establishment employees work within the region or metropolitan area of the establishment (Table 10).

- Utility-scale installers (engineering, procurement, and construction firms) often employ out-of-state labor for their larger projects.

- A typical field crew may be made up of an
  - Experienced management team permanently employed by the firm
  - Some permanent field workers
  - Temporary employees from the local workforce
  - Rural areas local labor pool is frequently small
  - Often the workforce will travel to the site, usually staying and working onsite for three to nine months.

![Location of Field Crew Relative to the Office]

- In-state within region/metropolitan area: 65.6%
- In-state outside region/metropolitan area: 12.9%
- Out-of-state: 21.5%

Table 10
Average Salary for Solar Employees in California

**Table 14**

<table>
<thead>
<tr>
<th></th>
<th>Solar PV Installer (Electrician)</th>
<th>Solar PV Installer (Non-electrician)</th>
<th>Solar Thermal Installer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry-level wage</td>
<td>$24.32</td>
<td>$18.92</td>
<td>$21.62</td>
</tr>
<tr>
<td>Mid-level wage</td>
<td>$32.43</td>
<td>$28.11</td>
<td>$28.11</td>
</tr>
<tr>
<td>Highest paid employee</td>
<td>$41.62</td>
<td>$35.14</td>
<td>$43.24</td>
</tr>
</tbody>
</table>

**Table 15**

<table>
<thead>
<tr>
<th></th>
<th>Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry-level wage</td>
<td>$24.46</td>
</tr>
<tr>
<td>Mid-level wage</td>
<td>$29.89</td>
</tr>
<tr>
<td>Highest paid employee</td>
<td>$32.61</td>
</tr>
</tbody>
</table>
# The Solar Foundation: 2018 Job Census in SMUD's Territory

**242,343**

Nationwide

## Top Ten Metros

<table>
<thead>
<tr>
<th>City</th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco-Oakland-Hayward, CA</td>
<td>22,101</td>
</tr>
<tr>
<td>Los Angeles-Long Beach-Anaheim, CA</td>
<td>15,569</td>
</tr>
<tr>
<td>New York-Newark-Jersey City, NY-NJ-PA</td>
<td>12,335</td>
</tr>
<tr>
<td>San Diego-Carlsbad, CA</td>
<td>9,414</td>
</tr>
<tr>
<td>Boston-Cambridge-Newton, MA-NH</td>
<td>8,855</td>
</tr>
<tr>
<td>Phoenix-Mesa-Scottsdale, AZ</td>
<td>6,653</td>
</tr>
<tr>
<td>Las Vegas-Henderson-Paradise, NV</td>
<td>5,911</td>
</tr>
<tr>
<td>San Jose-Sunnyvale-Santa Clara, CA</td>
<td>5,363</td>
</tr>
<tr>
<td>Riverside-San Bernardino-Ontario, CA</td>
<td>5,267</td>
</tr>
<tr>
<td>Sacramento--Roseville--Arden-Arcade, CA</td>
<td>5,168</td>
</tr>
</tbody>
</table>

Full National Report
SMUD employees earn $63,000 annually on average, or $30 per hour, which is 3% higher than the national salary average of $61,000 per year. (Careerbliss.com)

Currently 2,293 employed by SMUD.

- In 2020 SMUD will not add jobs per Mr. Orchards report to the SMUD Board in Nov, 2019
Solar jobs add value to our local economy

- 3307 employed Installation & Project Development
- 724 employed Manufacturing
- 625 employed Wholesale Trade & Distribution
- 256 employed Operations & Maintenance
- 256 employed in Other

**Mid level average wage** $29.89 x 5168 (# of people Employed in Solar in Sac) x 2080

- 2080 = how many hours a person works per year

Solar jobs add $321,300,761.60 to Sacramento Economy

SMUD $143,083,200

Note 1: The number of employees directly work on Solar is probably less than 2K)

Note 2: Mid level average wage used for this example to. Compare apples to apples