

# ROOFTOP SOLAR CREATES JOBS IN SACRAMENTO

Al Rich & Lee Miller

Dec 12, 2019

# SOLAR CREATES JOBS AND SPURS LOCAL ECONOMIES

- ▶ 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

# SOLAR INDUSTRY CONTENT

- ▶ 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.<sup>7</sup> Additionally, in September 2018, SB 100 was passed, committing the state to 100% carbon-free energy by 2045.<sup>8</sup>

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).<sup>9</sup> 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.<sup>10</sup>

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.<sup>11</sup>



SOLAR EMPLOYMENT BY SECTOR, 2010-2019

SECTOR	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 (Projected)
Installation and Project Development	43,934	52,503	65,165	81,827	112,143	142,383	171,533	165,174	155,157	169,202
Wholesale Trade and Distribution	11,744	17,722	16,005	19,771	20,185	24,377	32,147	30,912	29,243	29,905
Operations and Maintenance	-	-	-	-	-	-	-	-	11,164	11,273
Manufacturing	24,916	24,064	29,742	29,851	32,490	30,282	38,121	36,885	33,726	34,949
All Others	12,908	5,948	8,105	11,248	8,989	11,816	18,274	17,300	13,053	14,024

Table 2. Note: The Census separated the installation and project development sectors from 2012-2017. For this chart, jobs in the two categories were combined into one sector.

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.

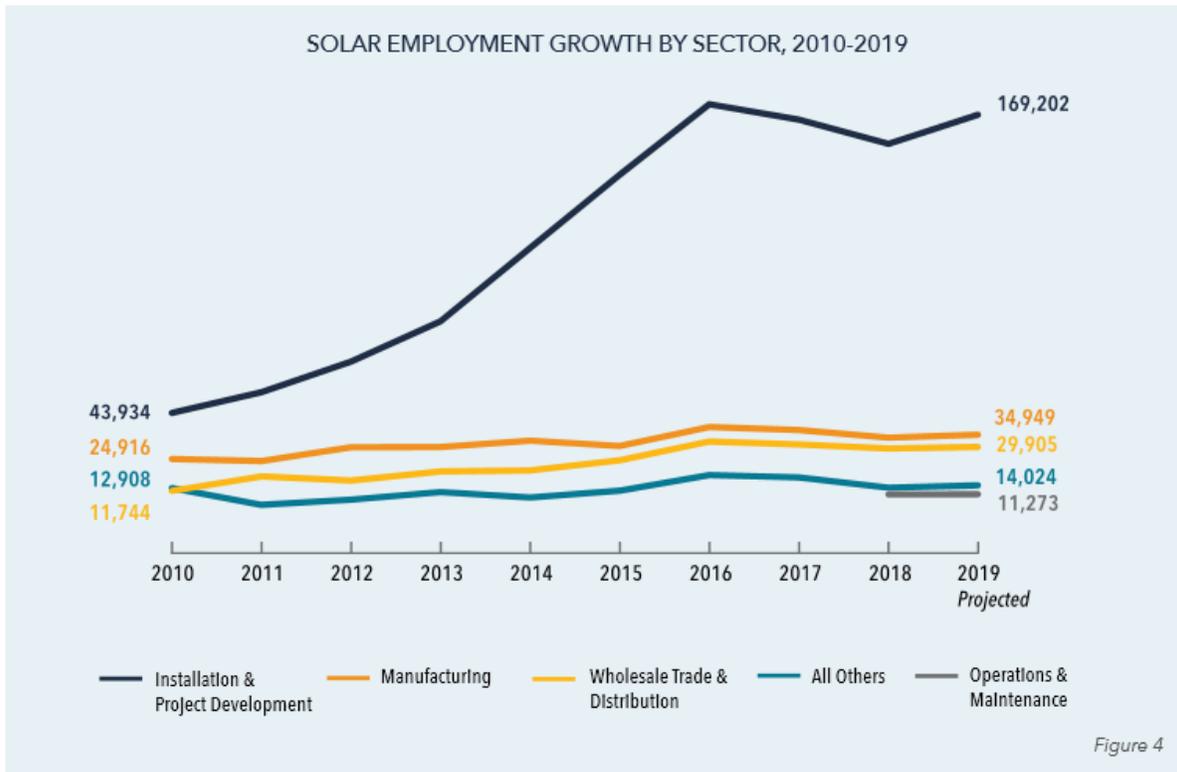


Figure 4

# TYPES OF OCCUPATIONS

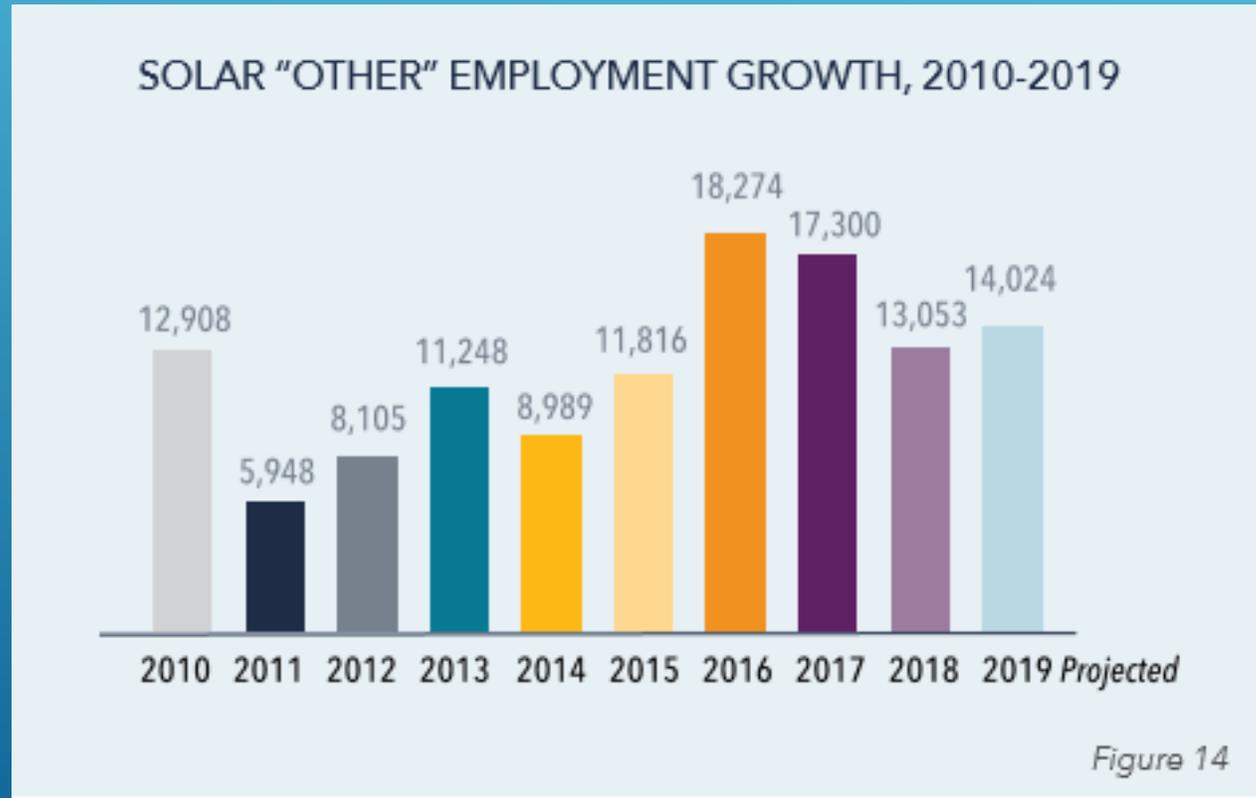
- ▶ Comparing employment by occupational category rather than by industry sector,
  - ▶ 32% of all solar employment is reported to be in administrative, management, and professional positions.
  - ▶ 38% of jobs were found to be in installation and repair positions
  - ▶ As more solar systems are installed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

	Production/ Manufacturing	Installation or Repair	Administrative	Management/ Professional	Sales	Other
Installation and Project Development	3.4%	37.2%	16.1%	16.5%	20.9%	6.0%
Wholesale Trade and Distribution	5.5%	8.8%	24.5%	17.2%	14.0%	30.1%
Operations and Maintenance	8.6%	55.1%	13.3%	16.9%	2.6%	3.6%
Manufacturing	19.1%	43.2%	12.9%	10.0%	7.8%	7.1%
All Others	9.2%	5.8%	16.6%	32.3%	8.1%	28.1%
Overall	7.1%	38.4%	15.9%	16.0%	14.8%	7.8%

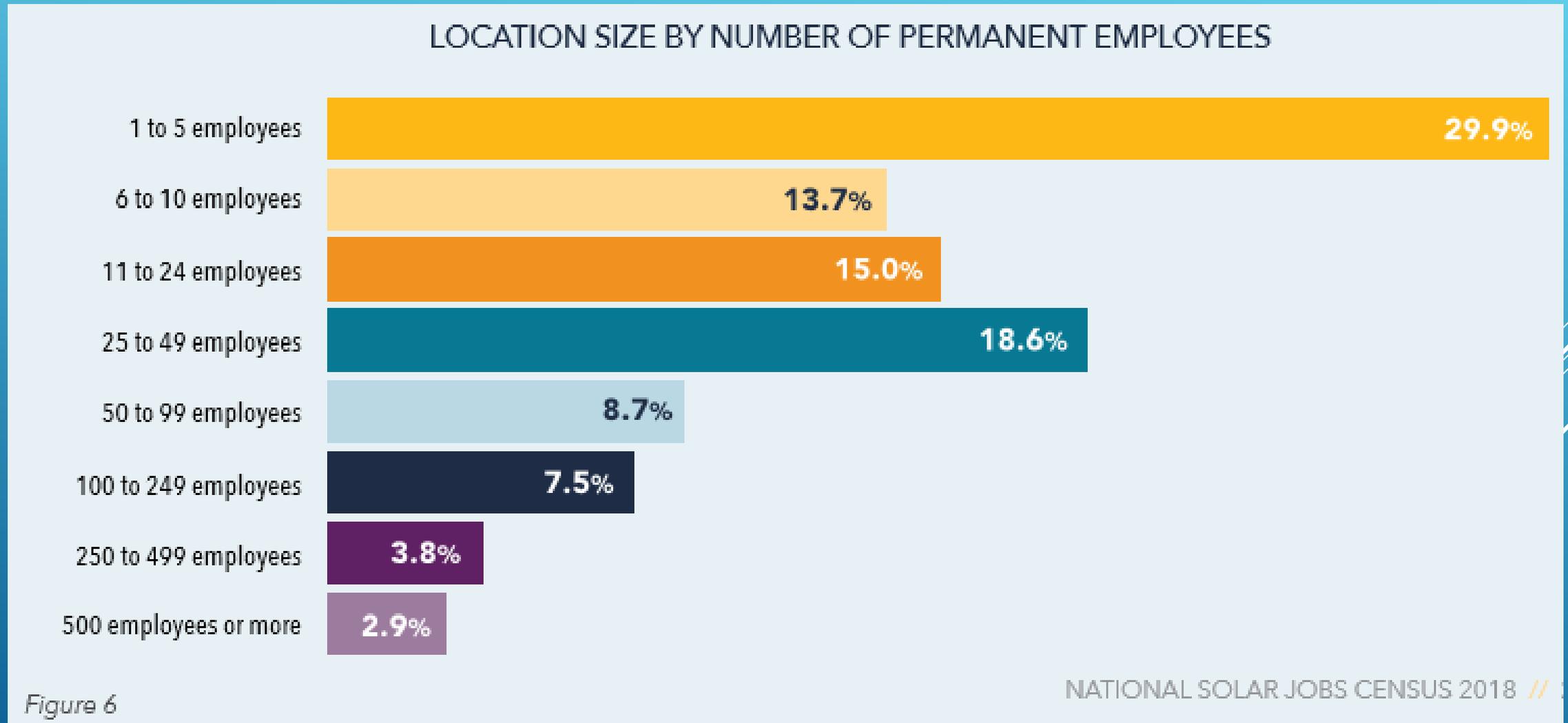
Table 4

# TYPES OF JOBS IN OTHER CATEGORY

- ▶ “Other” category include
  - ▶ Academic Research
  - ▶ Government oversight
  - ▶ Research & Development
  - ▶ Training
  - ▶ Nonprofits
  - ▶ Finance
  - ▶ Engineering
  - ▶ consulting
  - ▶ Law
  - ▶ Communications



# MOST SOLAR COMPANIES ARE SMALL BUSINESSES



# 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.

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

MEDIAN FULL-TIME INSTALLER WAGES

	Solar PV Installer (Electrician)	Solar PV Installer (Non-electrician)	Solar Thermal Installer
Entry-level wage	\$24.32	\$18.92	\$21.62
Mid-level wage	\$32.43	\$28.11	\$28.11
Highest paid employee	\$41.62	\$35.14	\$43.24

Table 14

MEDIAN FULL-TIME MANUFACTURING WORKER WAGES

	Manufacturing
Entry-level wage	\$24.46
Mid-level wage	\$29.89
Highest paid employee	\$32.61

Table 15

NATIONAL SOLAR JOBS CENSUS 2018 //

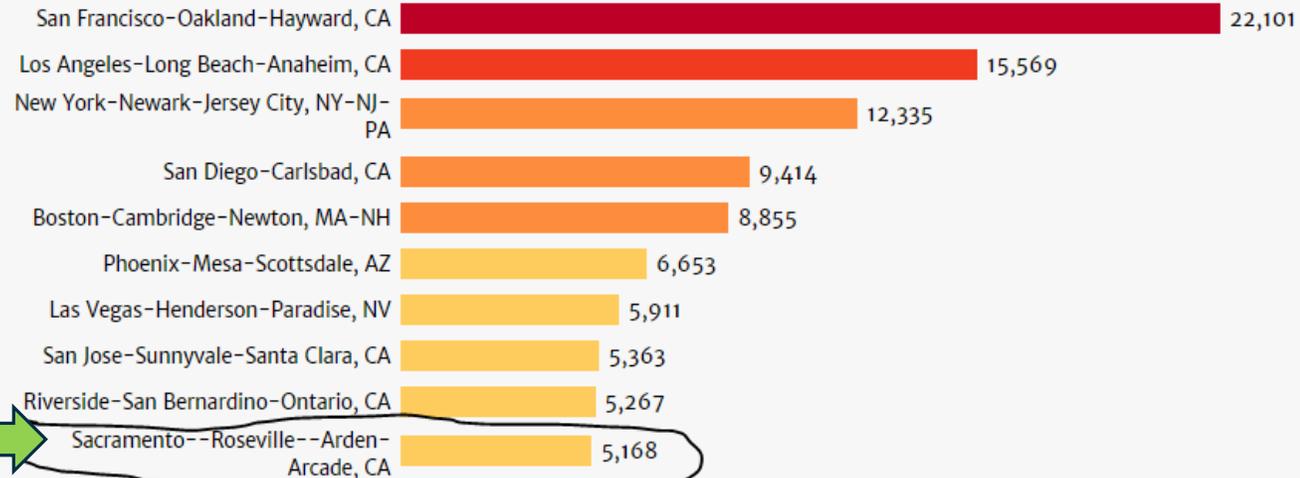
# THE SOLAR FOUNDATION: 2018 JOB CENSUS IN SMUD'S TERRITORY

2015 / 2016 / 2017 / 2018

[Full National Report](#)

242,343  
Nationwide

## Top Ten Metros

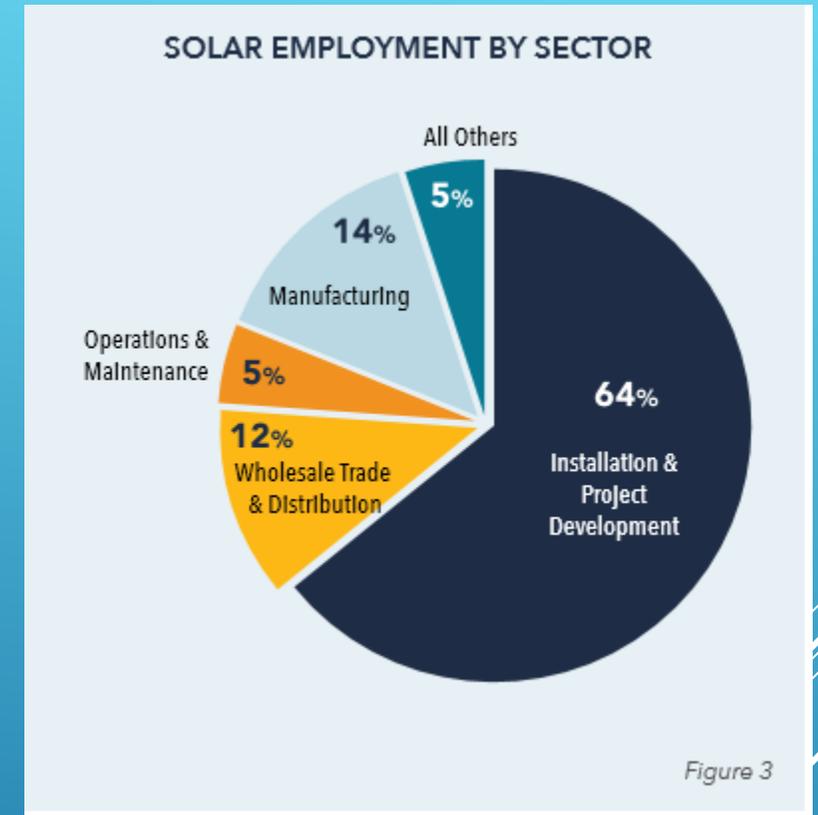


# COMPARING SMUD TO SACRAMENTO SOLAR INDUSTRY

- ▶ 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 adds \$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