Unlocking Capital for Climate Solutions

June 8, 2021

People. Planet. Employment.

GRID Alternatives' Mission

We build community-powered solutions to advance economic and environmental justice through renewable energy.

Our work includes:

- Direct solar project development & technical assistance
- Workforce development
- Low-income solar policy leadership

At GRID Alternatives, we believe that a successful transition to clean energy must include everyone.

Renewable energy can drive economic growth and environmental benefits in communities most impacted by underemployment, pollution, and climate change.

Our work is making a difference.
Since 2004, GRID Alternatives has:

- Installed solar for 19,540 households who qualify as low-income
- Engaged 45,469 people in solar education and training
- Helped families save over $500M in energy lifetime savings
- Prevented 1.3M tons of GHG emissions from being released into the atmosphere
- Provided nearly 261,000 job training hours focused on installs

Colorado project example: Ute Mountain Ute Tribe 1.2MW Community Solar Array

GRID Alternatives provided workforce training to 14 Tribal members, 11 of whom were hired as interns to help install the array.

Solar Deployment Hits Record Levels Despite Job Loss

Despite employment reductions, annual solar installations reached a record **19.2 GWdc in 2020**.

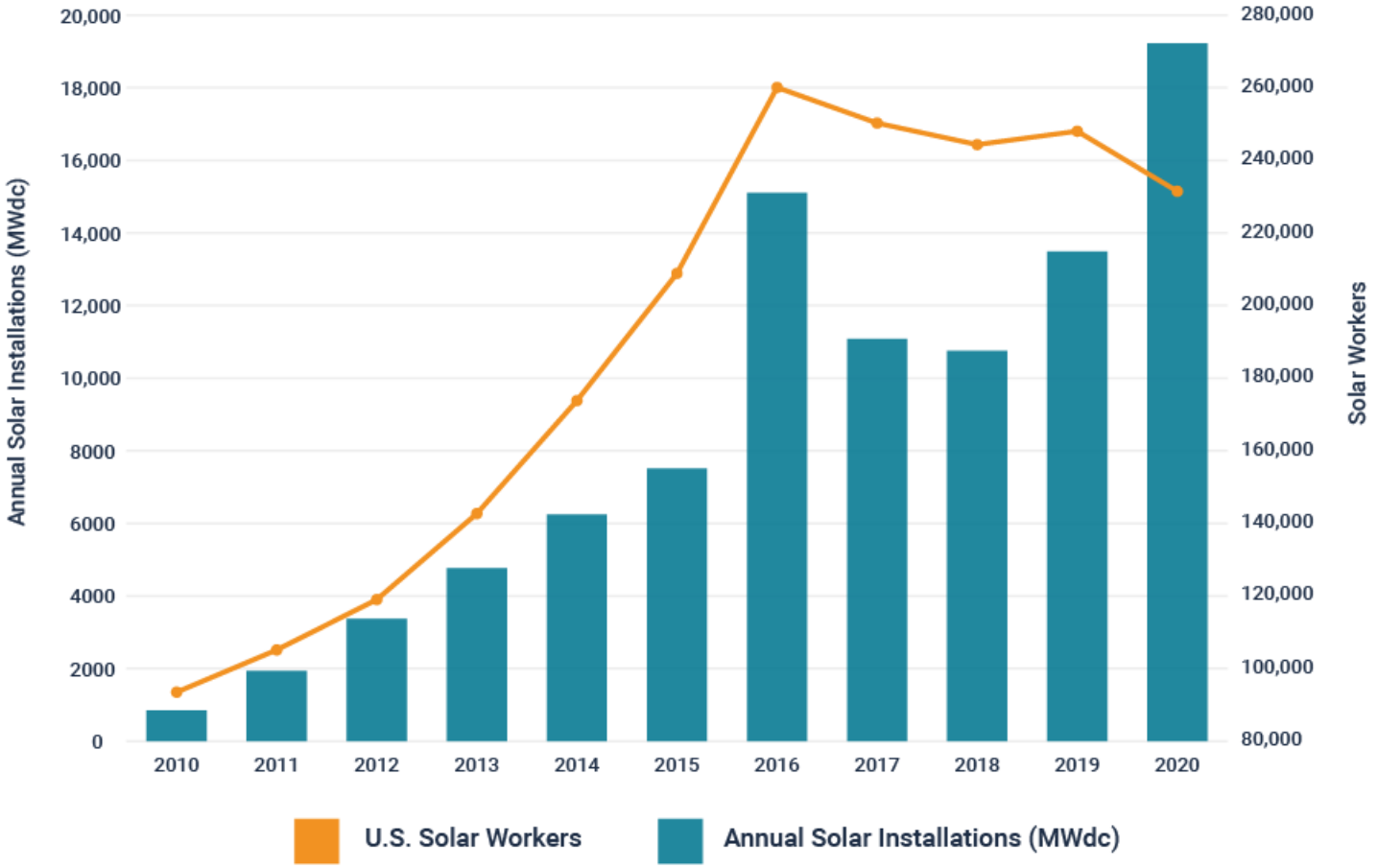
The industry was able to achieve these totals despite reduced employment in part due to a rapid increase in the share of utility-scale deployment.

- Utility-scale installations represented **73% of all solar capacity installed in 2020**, a new record
- Because utility-scale projects use fewer installation workers per kilowatt deployed, the increase in utility-scale market share allowed for greater deployment with lower labor intensity

However, equally important was an **increase in labor productivity** across all market segments.

- Residential productivity increased 19%.
- Non-residential productivity increased 2%
- Utility-scale productivity increased 32%

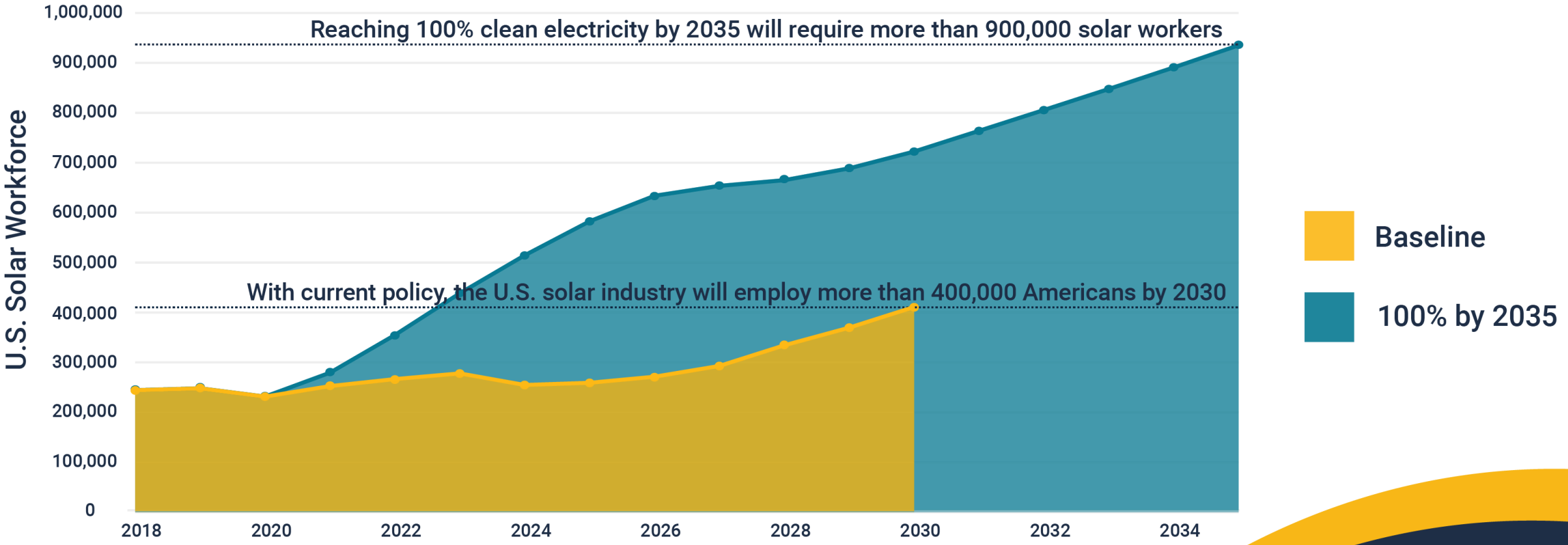
Labor Productivity Increased Allowing Increased Deployment



Sources: National Solar Jobs Census 2020, SEIA/Wood Mackenzie Power & Renewables U.S. Solar Market Insight 2020 Year in Review

Slide credit: National Solar Jobs Census 2020

Baseline Solar Employment Forecast vs. Workforce Needed to Reach 100% Clean Electricity by 2035



Sources: National Solar Jobs Census 2020, SEIA approximation of Biden Clean Energy Goal

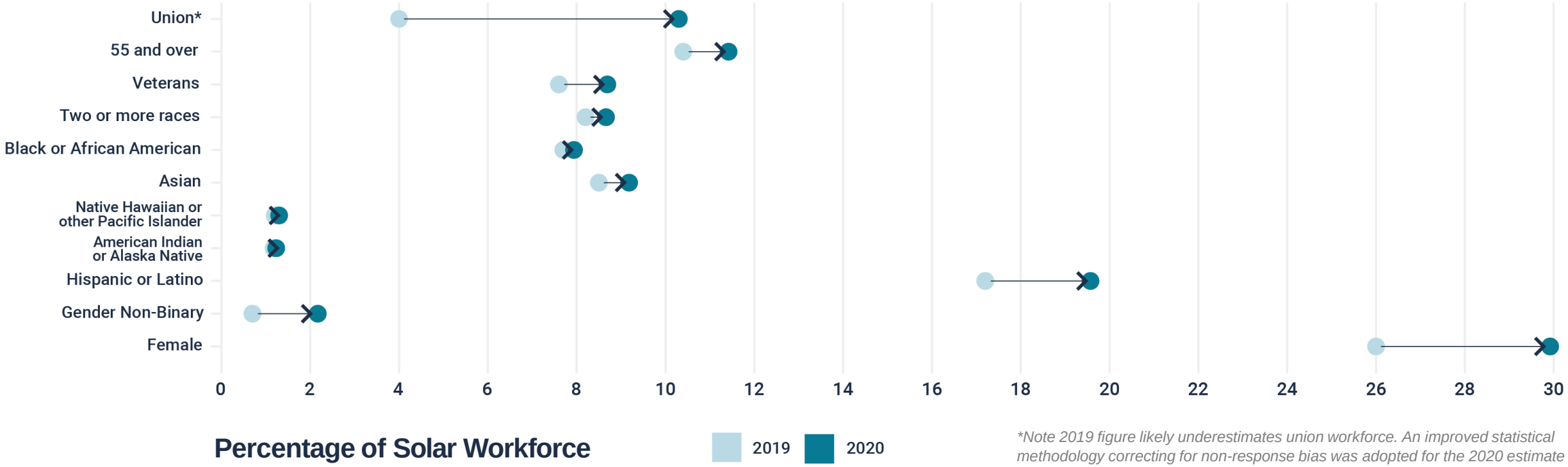
Under the current trajectory, and without significant policy shifts, the solar+ storage industry will employ **400,000 workers in 2030**.

The path necessary to achieve President Biden's goals to decarbonize the grid and expand domestic manufacturing will require more than **900,000 solar workers** across the supply chain by 2035.

Slide credit: National Solar Jobs Census 2020

Future Workforce Needs

Solar Workforce Grew More Diverse in 2020



**Note 2019 figure likely underestimates union workforce. An improved statistical methodology correcting for non-response bias was adopted for the 2020 estimate*

Nearly all demographic measures of diversity in the solar workforce saw modest increases in 2020, bringing numbers to an all-time high across most categories.

Women in solar grew from **26% to 30%** of the workforce.

- While the industry overall lost workers in 2020, the number of women employed in solar increased by nearly **4,800 to over 69,000**

Slide credit: National Solar Jobs Census 2020

Since 2015, solar industry employment has increased by **39%** for women, **92%** for Hispanic or Latino workers, **18%** for Asian workers, **73%** for Black or African American workers, and **19%** for veterans.

- Over that same time, overall solar industry employment has risen by 11%

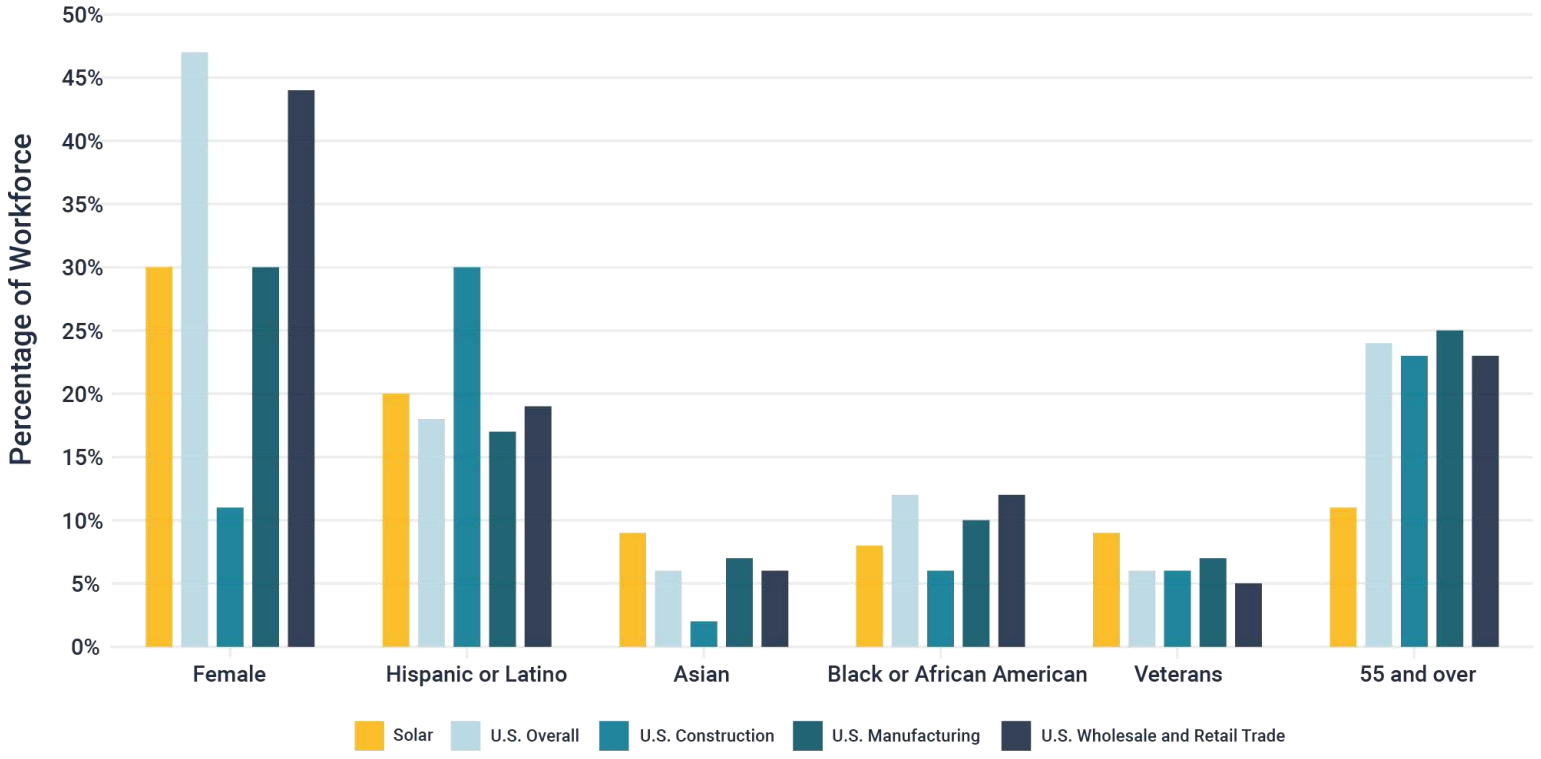
The share of workers who are members of labor unions now stands at **10.3%**.

Diversity in Solar Is Comparable to Other Industries

Though the solar industry has made significant progress in diversifying over the past 5 years, there is **still significant work to be done** before the solar industry matches the diversity of the country.

- Solar workers identify as “female” at almost **three times the rate** as the overall construction industry
- **Veterans make up a larger share** of the solar workforce (9%) than the overall economy

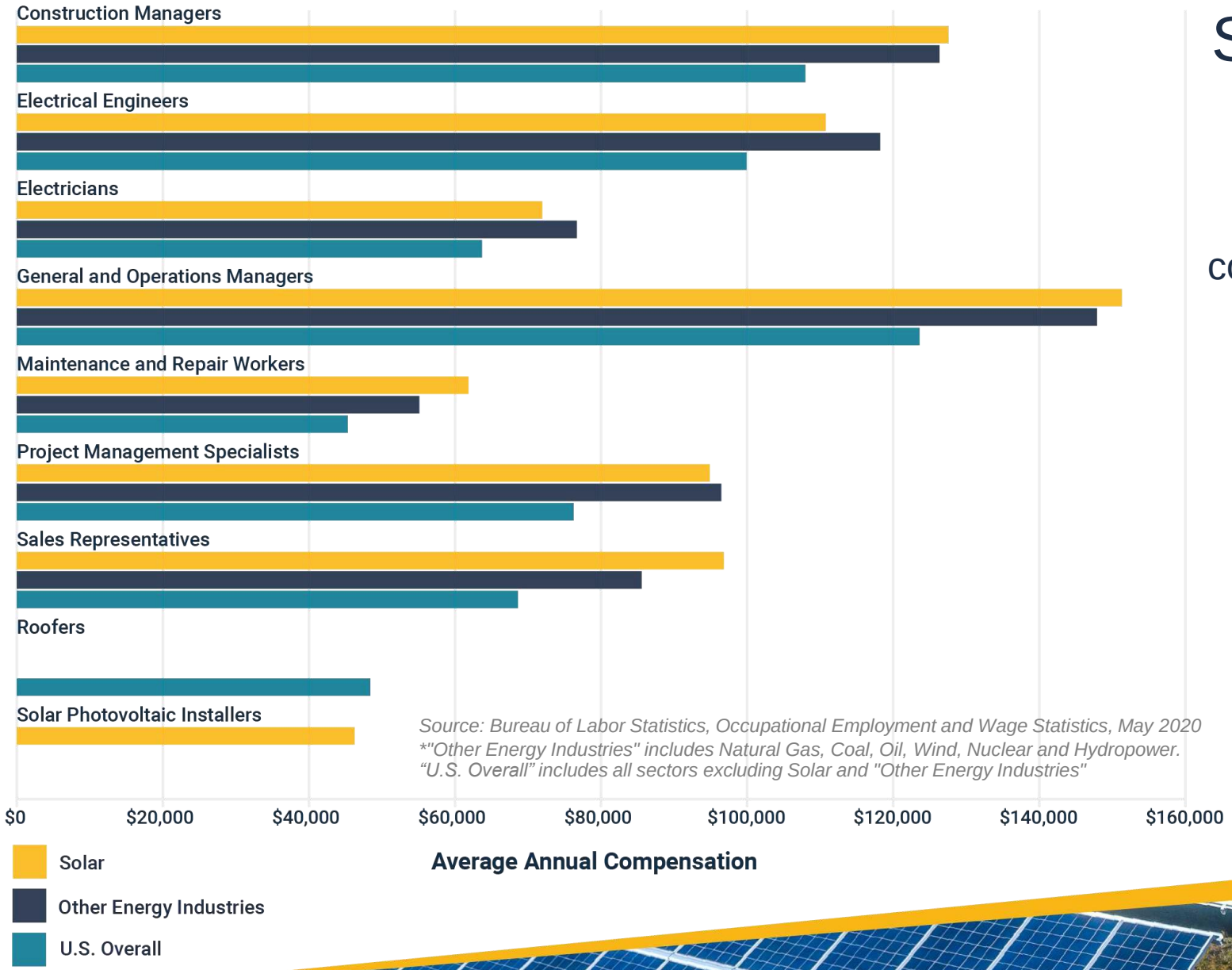
Environmental justice and equity are embedded in solar industry policy priorities and growth planning and will be critical as the industry rises to meet the joint challenges of climate change, the energy transition and social and environmental justice.



Slide credit: National Solar Jobs Census 2020

Sources: National Solar Jobs Census 2020, Bureau of Labor Statistics

Solar Compensation is On Par with Similar Trades



Source: Bureau of Labor Statistics, Occupational Employment and Wage Statistics, May 2020
**"Other Energy Industries" includes Natural Gas, Coal, Oil, Wind, Nuclear and Hydropower.*
"U.S. Overall" includes all sectors excluding Solar and "Other Energy Industries"

Compensation in the solar industry is comparable with similar occupations in other energy industries and higher than U.S. averages for most of the same positions.

Solar installers make similar amounts to their peers in the **roofing industry**.

Solar electricians make more than the **average electrician.**

Construction managers in solar make more than average and more than peers in other energy industries.

Slide credit: National Solar Jobs Census 2020

Top States for Solar Jobs

State	2020 Rank	2019 Rank	2020 Jobs	Change from 2019
California	1	1	68,677	-7.5%
Florida	2	2	11,219	-8.1%
New York	3	3	10,214	-4.9%
Texas	4	5	10,088	-1.7%
Massachusetts	5	4	9,495	-8.7%
Arizona	6	6	7,346	-5.5%
Utah	7	9	6,926	-2.5%
Colorado	8	8	6,771	-5.6%
Ohio	9	7	6,532	-10.3%
Nevada	10	10	6,174	-11.8%

Top States for Employment Growth Since 2015

State	Employment Growth Since 2015	Percent Change
Florida	4,659	71%
Utah	4,246	158%
Texas	3,058	44%
Virginia	2,352	120%
Minnesota	2,003	101%
New York	1,964	24%
Pennsylvania	1,810	72%
Indiana	1,794	114%
Illinois	1,779	51%
Colorado	1,771	35%

Top States for Solar Jobs per Capita

State	Jobs per Capita
Utah	1:473
Nevada	1:503
California	1:576
Vermont	1:615
Hawaii	1:617
Massachusetts	1:741
Colorado	1:854
Arizona	1:974
Rhode Island	1:1,087
New Mexico	1:1,128

State Overview

Primarily as a result of the pandemic, solar employment **dropped in 44 states in 2020**, representing the most broad-based labor reduction on record.

The pandemic had uneven impacts at the state level, however. States with large distributed solar markets experienced the most employment loss, as residential and commercial segments were hit hardest by work restrictions and have yet to fully recover. Markets with larger shares of utility-scale deployment fared somewhat better, though those labor forces were also reduced by workers missing time due to the pandemic.

In a handful of markets, rapid year-over-year increases in deployment, often in utility-scale solar, **helped to offset job losses in distributed markets**, leading to modest levels of employment growth or lower levels of job loss.

Of the top 10 states for solar employment growth percentage in 2020, 8 of them also rank in the top 20 for solar deployment growth rate in 2020.

Slide credit: National Solar Jobs Census 2020

Colorado's commitment to a renewable energy future

In Colorado:

- In 2019, Polis Administration unveiled a Roadmap to 100% renewable energy by 2040 and Bold Climate Action
- From 2014-2019, Colorado saw a 15% growth in energy jobs, which are projected to grow another 9% through 2024 – outpacing national growth of 5.6%
- Colorado was ranked 13th in the nation for installed solar capacity as of Q3 2020. The state is home to 346 solar companies employing 7,000 people throughout the state

Success Story

Michael Martinez

Graduate:
2020 GRID Alternatives Colorado
Installation Basics Training Program

Current Occupation:
Solar Installer, ARE Solar

“Being able to work with and be a part of GRID these past 5 weeks has been one of the biggest blessings in my life. Before coming to my first class, I was out of work 4-5 months with barely enough money to make rent…the fact that GRID gave me the chance to come out here with them to better myself, not only by putting rent money and food on my table, but it gave me something to do with my time, a chance at expanding my knowledge in this field, a good atmosphere to be in daily, and a whole new outlook on life and my current situation for the better.”

Success Story

Paul Matthews

Graduate:
2020 GRID Alternatives Colorado Installation Basics Training Program

Current Occupation:
Site Surveyor, Avolta Solar and
Owner, Black Star Drone Solutions

Paul was the first in line to be enrolled in GRID Colorado's first ever cohort of Installation Basics Training, launched in 2020. Paul was looking to blend his military and drone pilot experience to be a part of the booming clean energy transition.

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