

CLEAN JOBS AMERICA

3.2 MILLION CLEAN ENERGY JOBS¹

Clean energy is powering job growth in America.

CLEAN JOBS COUNT: Nearly 3.2 million Americans now go to work each and every day in solar, wind, energy efficiency, clean vehicles and other clean energy jobs.

CONGRESS—TO CONTINUE CREATING TENS OF THOUSANDS OF NEW JOBS FOR AMERICANS IN EVERY STATE:

- // **Properly fund** R&D investments in innovation and efficiency at EERE, ARPA-E, the Loan Programs Office, and the Advanced Technology Vehicles Manufacturing (ATVM) at U.S. Dept. of Energy and U.S. EPA
- // **Renew** the 179D Commercial Buildings Energy Efficiency Tax Deduction, enabling building owners to claim tax deductions for installing energy efficient systems and buildings

- // **Protect** clean vehicles policies like greenhouse gas and CAFE standards that are saving business and consumers money with every visit to the pump while simultaneously driving innovation in the U.S. auto industry
- // **Improve** electricity infrastructure by modernizing the grid to handle more renewable energy and adding EV infrastructure
- // **Defend** and expand opportunities for rural clean energy growth while also incentivizing soil health and low-carbon agriculture in federal and state farm policies

STATES—TO KEEP THE CLEAN ENERGY JOBS GROWTH GOING:

- // **Strengthen** renewable energy and energy efficiency standards and modernize utility grids to handle more renewables
- // **Enact** policies to expand the use of cleaner vehicles
- // **Encourage** cities and local governments to cut energy waste in large existing buildings and encourage more renewable energy projects

17% Amount of Texas' overall electric generating capacity that comes from wind.² Texas has more wind-based electric generation capacity than any other state³

4 The number of states that generate more than **30%** of their electricity from wind: Kansas, Iowa, Oklahoma, and South Dakota.⁴ These states together employ more than **9k** in wind

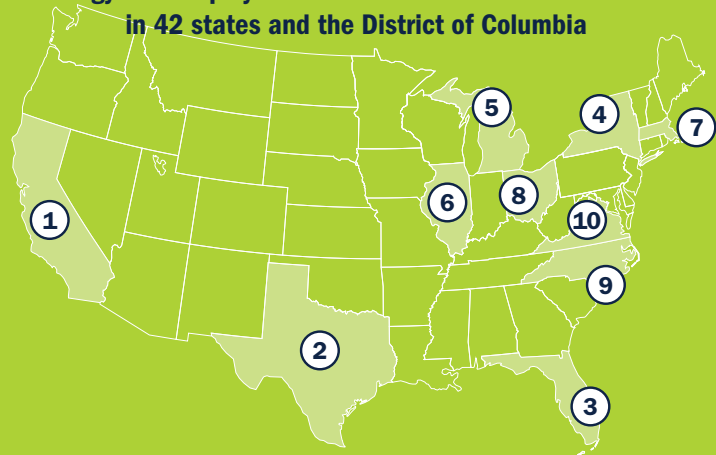
No. 2 Rank of North Carolina among all states for installed solar capacity.⁵ North Carolina currently has more than **9k** jobs in solar

53 GW Led by Florida's 750 MW and Minnesota's 437 MW of installed capacity in 2017, the U.S. moved past the 50 GW milestone in 2017 with 53 GW of installed solar⁶

TOP 10 STATES FOR CLEAN ENERGY JOBS

RANK	STATE	TOTAL*	SOLAR	WIND	ENERGY EFFICIENCY	CLEAN VEHICLES
1	California	514,822	138,319	5,275	310,433	18,353
2	Texas	222,949	11,608	25,222	154,565	16,483
3	Florida	150,723	10,912	4,056	112,620	9,350
4	New York	147,743	11,858	3,214	117,339	8,813
5	Michigan	121,761	5,532	4,736	84,052	21,873
6	Illinois	119,031	5,222	8,633	86,916	9,423
7	Massachusetts	117,322	17,861	1,839	84,556	4,027
8	Ohio	107,703	8,092	963	79,653	15,320
9	North Carolina	107,230	9,173	759	84,020	7,125
10	Virginia	92,054	4,197	1,456	76,621	4,752

Clean energy now employs more workers than the fossil fuel industry in 42 states and the District of Columbia



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* Total includes all clean energy jobs categories, including solar, wind, EE, clean vehicles, battery storage, advanced biofuels, low-impact hydro and other areas

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ENERGY EFFICIENCY

2.25 million jobs

67k

The increase in how many Americans work with energy efficiency technologies. Energy efficiency added the most new jobs of any energy industry, accounting for half of the entire energy sector's job growth (133k) in 2017.

9%

The projected job growth in overall energy efficiency jobs for 2018

1.3M

The number of energy-efficiency jobs in construction, with employers projecting a job growth rate of 11% by the end of 2018

315k

The number of manufacturing jobs in energy efficiency, an increase of 10%

1 IN 4

In 2017, ENERGY STAR® appliances manufacturers employed more than 1 out of every 4 energy efficiency workers, largest category of employment

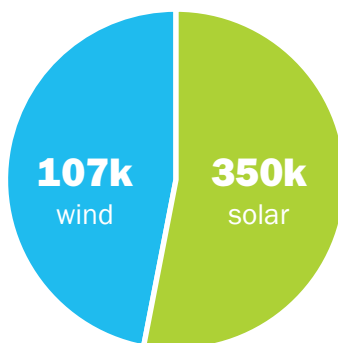
WHAT DO ENERGY EFFICIENCY WORKERS DO?

- // Upgrade outdated heating, air conditioning and ventilation systems
- // Install energy-saving LED lighting
- // Manufacture ENERGY STAR-certified appliances, lighting, ceiling fans, commercial cooking equipment, refrigerators, residential boilers, clothes dryers, etc.
- // Save money for businesses, homeowners, schools, states, municipalities, military



SOLAR AND WIND

457,000 jobs



350k SOLAR JOBS

- // From 2016 to 2017, solar jobs fell 6%—but solar employers report they expect to increase employment **5%** in 2018
- // **Two-thirds** of solar job losses were in a pair of states with maturing solar markets—MA and CA. In 29 states last year, solar jobs increased
- // U.S. solar workforce increased **168%** in the past seven years, from about 93,000 jobs in 2010⁷
- // **One-third** of the solar energy workforce in 2017 was female, and 1 in 5 workers were Hispanic or Latino

107k WIND JOBS

- // Wind provides the **3rd-largest** share of electric power generation employment in the U.S.
- // Jobs grew **6%** last year, with employers projecting job growth of just under **4%** for 2018
- // **One-third** of the wind energy workforce in 2017 was female, and 1 in 5 workers were Hispanic or Latino



CLEAN VEHICLES

220,000 jobs

- // Hybrid EVs (**100k**)
- // Plug-in hybrids (**40k**)
- // EVs (**56k**)
- // Natural gas vehicles (**12k**)
- // Hydrogen and fuel cell vehicles (**11k**)

OTHER CLEAN SECTORS

250,000 jobs

- // Energy storage (**91k**)
- // Smart grid and micro-grid (**43k**)
- // Bioenergy/CHP (**39k**)
- // Ethanol/non-woody biomass including biodiesel (**20k**)
- // Other grid modernization (**19k**)
- // Other biofuels (**18k**)
- // Low-impact hydro (**12k**)
- // Geothermal (**8k**)

“There are now as many clean energy workers as there are school teachers in America and as many energy efficiency workers as there are waiters and waitresses in America’s bars and restaurants.”

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CLEAN ENERGY JOBS: HOW DO THEY STACK UP?

- // Solar alone employs nearly **4X** the number of coal generation workers
- // Energy efficiency alone employs **2X** as many workers as *all* fossil fuels
- // More Americans now work in clean energy than work in agriculture, real estate, investment banking, and the entertainment, media and sports industries combined.⁸ There are now as many clean energy workers as there are school teachers in America⁹ and as many energy efficiency workers as there are waiters and waitresses in America's bars and restaurants.¹⁰

AMERICANS OVERWHELMINGLY WANT MORE CLEAN ENERGY

MAJORITIES ACROSS POLITICAL SPECTRUM SUPPORT MORE CLEAN ENERGY

- // **76%** of all US adults (including **57%** of Republican-leaning Americans) support the government spending **MORE** on developing solar and wind power¹¹
- // **73%** of Americans widely favor the U.S. emphasizing alternative energy over traditional energy sources¹²
- // **83%** of Americans say increasing use of renewable energy sources is a top or important priority for the country's energy policies¹³

WHY SUCH STRONG SUPPORT? FAST-GROWING JOBS

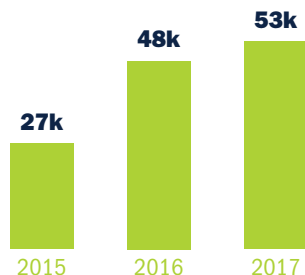
- // Wind technicians and solar installers are predicted to be the **two fastest-growing jobs** from 2016 to 2026¹⁴
- // Solar jobs grew **9X** faster than the overall U.S. economy and one in every 100 new jobs created in 2017 was a solar job¹⁵
- // **95%** of all new energy capacity added in 2017 was from solar, wind, geothermal, and hydropower¹⁶



CLOSER LOOK: BATTERY STORAGE

BATTERY STORAGE JOBS IN AMERICA¹⁷

The battery storage industry added almost 6,000 new jobs for a 12% growth rate in 2017.



When lithium-ion battery costs plunge...

- // Nearly **80%** price drop since 2010¹⁸

...Battery storage jobs surge

- // Employment jumped **6k** over last year
- // **12%** growth rate

HIGHWAYS

- // More than **800k** EVs are on American roads, with **25k** sold nationwide in March 2018 alone¹⁹

HOMES

- // Residential battery storage systems (coupled with rooftop solar) are expected to increase **4X** in 2018²⁰

UTILITIES

- // As renewables scale up, electric power storage increases energy security. In 2018, largest solar-and-storage system in U.S. went on line in Florida²¹

MORE ENERGY EFFICIENCY = MORE CONSTRUCTION JOBS



1 in 6

More than 1 out of every 6 U.S. construction jobs are in energy efficiency (18%)



6 out of 10

Nearly 60% of energy efficiency's 2.25 million employees work in construction (1.27 million)

80%

of energy efficiency construction businesses say employees spend majority of time on energy efficiency—an increase from last year (74%)

AMERICA'S MILITARY: A CLEAN ENERGY PIONEER

AMERICA'S MILITARY—A CLEAN ENERGY PIONEER

Clean energy increases our military's energy security, creates private-sector jobs, and trains soldiers in clean energy technologies and skills they take to civilian life.

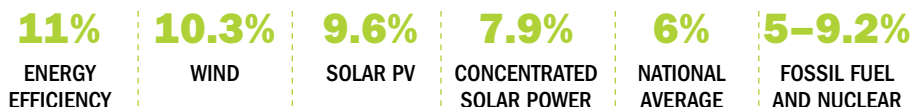
- // **5X INCREASE**—As the world's single largest consumer of energy, the U.S. military has quickly become a leader on renewable energy and by end of 2018, installed renewable energy capacity on DOD installations could quintuple to 2.1 GW.²²
- // **1,600**—The Department of Defense had 1,631 active renewable energy projects in 2016, putting the US military on pace to obtain 20% of energy from renewable sources by 2020.²³

"Innovation on the energy front is central to our military's modernization and readiness efforts as well as U.S. economic interests abroad. Bottom line: the business case is clear: it's all about the mission."

— VICE ADM. DENNIS MCGINN, FORMER ASSISTANT SECRETARY OF NAVY FOR ENERGY, INSTALLATIONS & ENVIRONMENT

GOOD JOBS FOR VETERANS

Clean energy hires a greater percentage of veterans than most industries—including oil and gas



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ENDNOTES

- 1 These are direct jobs. Unless otherwise specified, all data comes from 2018 USEER
- 2 <http://www.ercot.com/content/wcm/lists/114740/DemandandEnergy2017.xlsx>
- 3 <https://www.wsj.com/articles/which-state-is-a-big-renewable-energy-pioneer-texas-1472414098>
- 4 <https://www.awea.org/amr2017>
- 5 <https://www.seia.org/research-resources/solar-market-insight-report-2017-year-review>
- 6 <https://www.greentechmedia.com/research/subscription/u-s-solar-market-insight#gs.P878J84>
- 7 <https://www.thesolarfoundation.org/solar-jobs-census/factsheets-2017>
- 8 https://www.bls.gov/oes/current/oes_nat.htm#00-0000
- 9 <https://www.bls.gov/iag/tgs/iag61.htm>
- 10 <https://www.bls.gov/iag/tgs/iag722.htm>
- 11 <http://content.gallup.com/origin/gallupinc/GallupSpaces/Production/Cms/POLL/lgu2wsj9euu7bbzaucg0jw.png>
- 12 <http://news.gallup.com/poll/232028/energy-concerns-low-increasing-supply-not-priority.aspx>
- 13 <http://www.pewinternet.org/2017/05/16/public-divides-over-environmental-regulation-and-energy-policy>
- 14 <https://www.bls.gov/news.release/ecopro.nr0.htm>
- 15 <https://www.thesolarfoundation.org/national>
- 16 <https://www.eia.gov/electricity/data/eia860m>
- 17 Clean Jobs America, 2017 USEER, 2018 USEER
- 18 <https://www.nrdc.org/revolution-now>
- 19 <https://www.nrdc.org/experts/arjun-krishnaswami/nrdcs-revolution-now-showcases-hopeful-clean-energy-story>
- 20 <https://www.utilitydive.com/news/residential-storage-faces-sunny-prospects-this-year/520966>
- 21 <https://www.utilitydive.com/news/fpl-adds-40-mwh-battery-to-solar-array-claiming-largest-combined-system/518959>
- 22 <http://www.pewtrusts.org/~media/legacy/uploadedfiles/peg/publications/report/pewdodreport2013ks10020314pdf.pdf>
- 23 <https://www.acq.osd.mil/eie/Downloads/IE/FY%202016%20AEMR.pdf>



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**Good for the Economy.
Good for the Environment.**