

The Midwest: Home to 737,000 Clean Energy Jobs

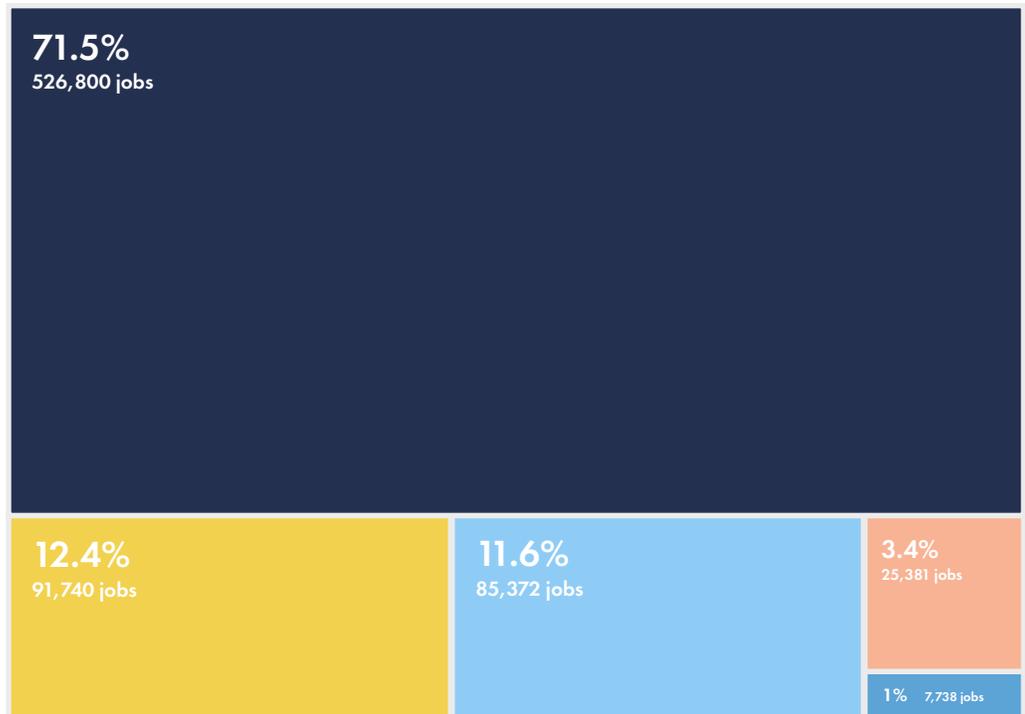
MIDWEST CLEAN ENERGY JOBS GROW FASTER THAN REST OF NATION

Clean energy is a major employer in the Midwest with 737,031 jobs. In 2018, the industry added more than 28,000 jobs.¹ That's a 4 percent growth rate, and it's more than the industry's national growth rate of 3.6 percent. Energy efficiency continues to be the largest Midwestern clean energy employer; the sector is home to 70 percent of all the region's clean energy jobs. Thousands of different Midwestern companies and establishments hire clean energy workers in any given year. Combined, these employers anticipate adding more than 51,000 clean energy jobs in 2019 -- a 7 percent growth rate.

SECTOR BREAKDOWN

Fig. 1:
Clean Energy Technology
Sectors, 2018

- Energy Efficiency
- Renewable Energy Generation
- Advanced Transportation
- Advanced Grid
- Clean Fuels



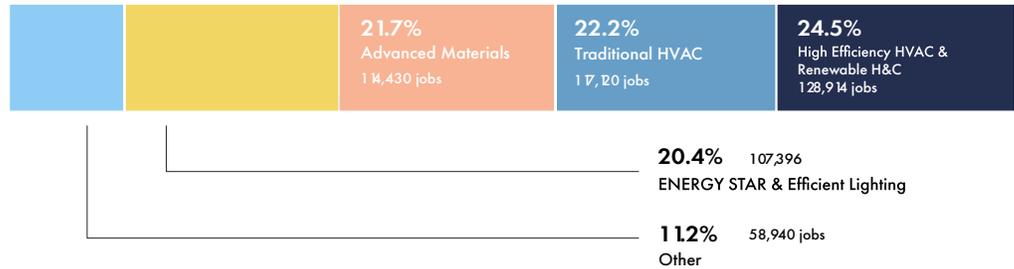
1. Unless otherwise stated, all data is based on the 2019 USEER. Energy Futures Initiative. (2019). The U.S. Energy Employment Report. Washington, DC. www.usenergyjobs.org. The Data provided relies on thousands of data points provided via survey. EFI, NASEO and BWRP have made every effort to supply current and accurate information but assume no responsibility or liability for any decisions based upon the information presented. For more information on the survey methodology see cleanjobsmidwest.com/about.

ENERGY EFFICIENCY JOBS DOMINATE MIDWEST'S CLEAN ENERGY LABOR MARKET

526,801 Midwesterners work in energy efficiency. That's more than any other industry in the clean energy sector, and it's enough to fill Ohio Stadium five times. In 2018, Midwestern employers created 13,106 energy efficiency jobs, a 2.6 percent growth rate.

Energy efficiency workers are active throughout the value chain. They manufacture ENERGY STAR-rated kitchen appliances; install efficient lighting systems at car dealerships; implement software that optimizes traditional heating, ventilation and air conditioning (HVAC) systems in high schools; build renewable heating and cooling systems, and handle advanced building materials at new office towers.

Fig. 2:
Energy Efficiency Subsectors,
2018



ADVANCED TRANSPORTATION TURNS CORNER

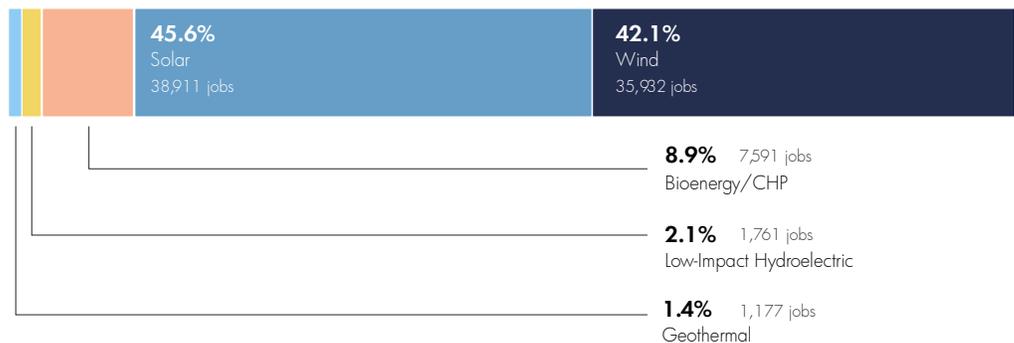
Advanced transportation is the Midwest's No. 2 clean energy employer with 91,741 jobs. Following job losses in 2017, the sector's growth rate in 2018 spiked 15.4 percent, a gain of 12,271 jobs.

Two vehicle styles were primarily responsible for the growth -- plug-in hybrid vehicles and hybrid electric vehicles. 19,147 people now work on plug-ins in the Midwest, 4,393 more than in 2017, a 30 percent gain. 39,916 people work on hybrid electric vehicles, 3,709 more than in 2017, a 10 percent gain. EV jobs also boomed: 24,588 Midwesterners now work on EVs, 4,508 more than in 2017 for a 22 percent growth rate.

RENEWABLE ENERGY GENERATION JOBS INCREASE, BUCK NATIONAL TREND

The third-largest employer in the region's clean energy industry is renewable energy generation with 85,372 workers. Bucking national trends, the region's renewables industry employs 2,245 more people than in 2017.

Fig. 3:
Renewable Energy Subsectors,
2018

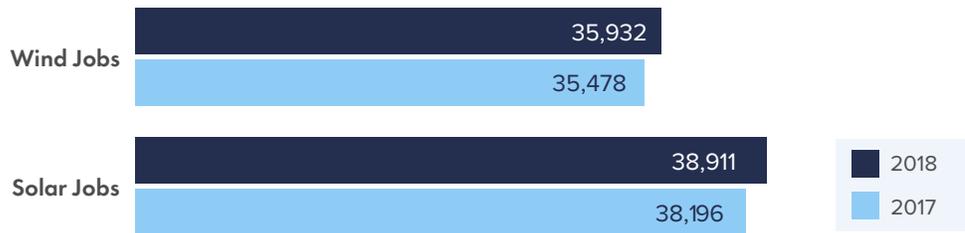


Whereas Midwestern renewables jobs increased by 2.7 percent, national renewables jobs actually decreased by 1.5 percent. Solar played a big role in this labor market dynamic. Solar now employs 38,911 Midwesterners, 714 more than in 2017 for a 1.9 percent growth rate.

Nationally, however, solar job growth slipped 4.5 percent. Besides solar, wind is a major renewable energy employer in the Midwest with 35,932 workers. That's 1.3 percent more than in 2017, an increase of more than 450 jobs.

Other job-creating industries in the renewables sector include: geothermal, bioenergy and low-impact hydroelectric power.

Fig. 4:
Wind and Solar Jobs, 2018 and
2017 Comparison



IN ADVANCED GRID SECTOR, ENERGY STORAGE PACKS AWAY HUNDREDS MORE JOBS

Advanced grid work employs 25,381 Midwesterners. Jobs in the sector grew 2.5 percent from 2017, adding 629 workers. The fourth-largest clean energy employer in the region, advanced grid encompasses jobs in energy storage, smart grid, microgrid and other grid modernization work. Energy storage jobs are the largest employer in the sector with 13,136 jobs, 314 more than in 2017.

CLEAN FUELS SECTOR TRIMS JOBS

7,738 Midwesterners work in clean fuels jobs, a 1.6 percent decrease from 2017. This is a loss of 123 jobs. Clean fuels include non-corn ethanol, non-woody biomass and other technologies not yet in wide commercial production like algal biofuel, syngas, bioheat blends, and landfill gas.

Fig. 5:
Top 3 MSAs in Clean Energy
Employment, 2018

Metro Area (MSA)	Total Clean Energy Employment	Renewable Energy Employment	Energy Efficiency Employment
Chicago-Naperville-Joliet, IL-IN-WI MSA	101,201	15,362	71,514
Detroit-Warren-Livonia, MI MSA	55,447	5,281	37,214
Minneapolis-St. Paul-Bloomington, MN-WI MSA	40,486	7,105	29,163

MIDWEST CLEAN ENERGY JOBS DATA INFLUENCING NATIONAL NUMBERS

The clean energy sector constitutes a significant segment of the Midwest's overall labor market. Combined, the various clean energy sectors-- energy efficiency, renewables, energy storage, clean fuels, etc. -- are now responsible for nearly 2 percent of all the jobs across the entire region.²

Given the size of the region's clean energy market, any contraction or expansion in the number of jobs in the sector can impact and amplify broader Midwestern economic trends. This was the case in 2018, as jobs in the Midwest's clean energy industry grew 4 percent, helping lift the region's overall job growth rate to 2.4 percent.

Nationally, the Midwest is a clean energy job powerhouse. In 2018, every single state in the region added clean energy jobs, and the Midwest went on to account for nearly a quarter of all clean energy jobs created across the country. One big reason for this regional growth? Advanced transportation, which saw an 80 percent year-over-year increase in EV sales, adding 12,000 jobs throughout the sector. This was a U-turn from 2017, when alternative transportation jobs decreased.

Focusing on just the renewable energy industry, the Midwest was an outlier. Nationally, tariffs on solar modules led businesses in the residential solar space to restructure and shed jobs. This led to a decrease in renewable energy jobs across the country. But in the Midwest, renewable energy jobs grew by nearly 3 percent. All but four states in the Midwest added renewable energy generation jobs in 2018.

Clean energy job growth in the Midwest is expected to continue: regional clean energy employers project 7 percent job growth in 2019.

COMPARING CLEAN ENERGY JOBS TO FOSSIL FUEL JOBS

In 2018, 187,753 Midwesterners worked in jobs in fossil fuel energy industries like coal, natural gas, and oil.³ While a regionally significant employer, fossil fuels still employ barely a quarter the number of clean energy workers. Electric power generation jobs using fossil fuels put 62,681 people to work, compared to 85,372 jobs in renewable energy generation.

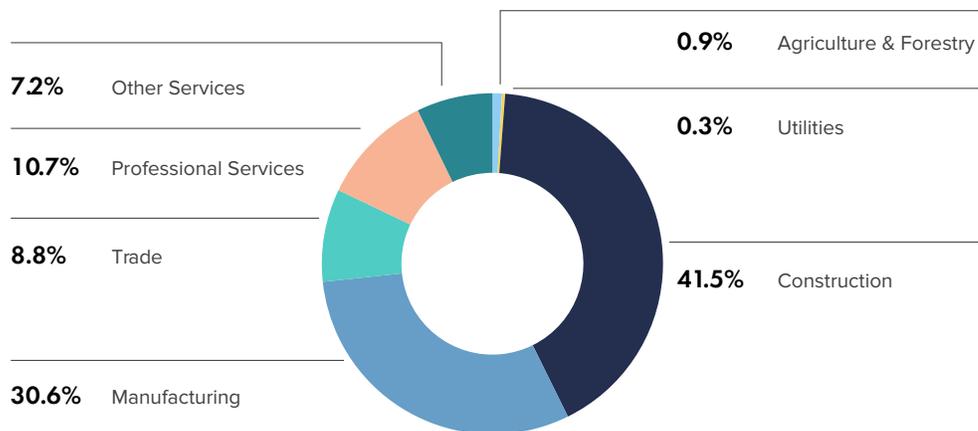
Coal jobs, meanwhile, dropped nearly 30 percent due to a range of market factors including inexpensive natural gas and increased demand for renewable energy, which grew jobs at a 2.7 percent clip.

2. U.S. Bureau of Labor Statistics Local Area Unemployment Statistics, 2018 Preliminary data

3. 2019 US Energy and Employment Report. This figure does not include gas station workers

VALUE CHAIN

In addition to breaking down clean energy jobs by industry, jobs can also be categorized by their function in the value chain. This report divides the clean energy jobs value chain into the following categories: agriculture, utility, construction, manufacturing, trade, professional service, and other service jobs. Each value chain category captures jobs from multiple clean energy sectors and industries.



When Midwestern clean energy jobs are broken down by their placement in the value chain, construction makes up 41.5 percent of the jobs, while manufacturing represents 30.6 percent.

DEMOGRAPHICS

Throughout the region, 11.1 percent of clean energy workers are veterans. By comparison, veterans make up 6 percent of the national labor force. The large ratio of veterans transitioning to clean energy jobs is in part the result of the U.S. Department of Defense's ongoing investments in technologies like renewable energy and energy efficiency for national security and budgetary reasons. The military has also funded training programs that prepare veterans for private-sector employment in industries like solar.

Small businesses drive the region's clean energy sector – 71.4 percent of Midwestern clean energy businesses employ fewer than 20 individuals.

SUMMARY

Clean energy workers in the Midwest do much more than just install solar panels on rooftops. The industry is broad, diverse and growing. Advanced transportation jobs came back from a significant drop in 2017, with electric, hybrid and plug-in hybrid vehicles leading the way. Meanwhile, solar jobs in the Midwest increased even as the industry faced job losses in the U.S. overall. With 4 percent overall job growth and jobs created in all 12 Midwestern states, the region remains a bright spot in the overall U.S. clean energy job market.

The data and analyses presented in this report by Clean Energy Trust and Environmental Entrepreneurs are based on data collected for the 2019 U.S. Energy Employment Report (2019 USEER), produced by the Energy Futures Initiative (EFI) in partnership with the National Association of State Energy Officials (NASEO) and collected and analyzed by BW Research Partnership (BWRP).

2019 CLEAN JOBS MIDWEST

