

# Michigan: Home to 126,081 Clean Energy Jobs

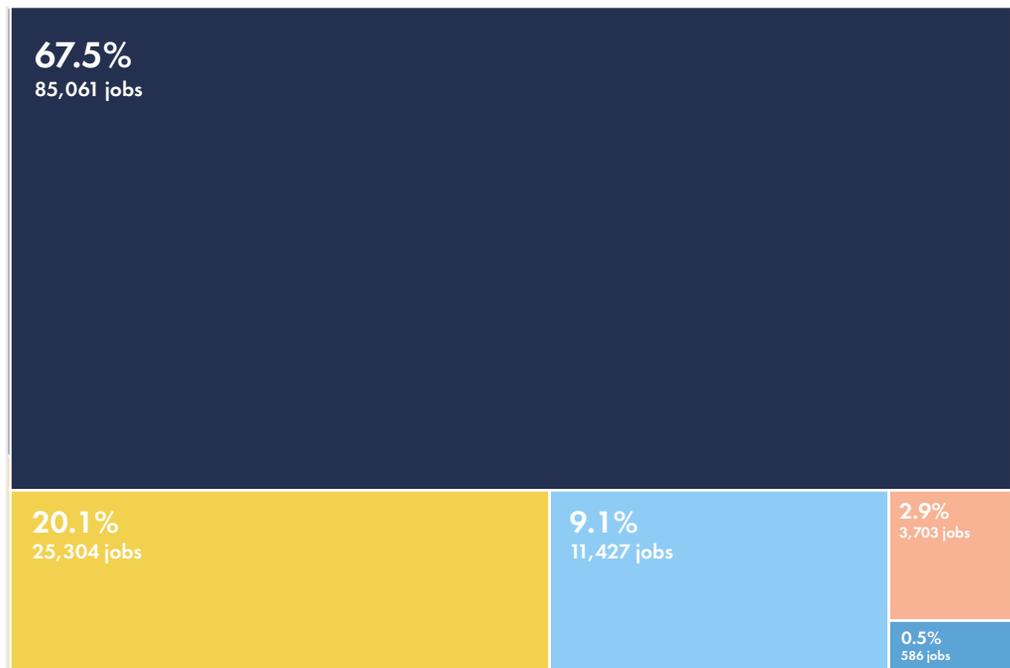
## MICHIGAN LEADS THE MIDWEST IN CLEAN ENERGY JOBS

Michigan has 126,081 clean energy jobs -- more than any other state in the entire region. In 2018, the industry added 4,800 jobs. That's a 4 percent growth rate, and it's right in line with the regional average. Alternative transportation saw the most growth, expanding by nearly 16 percent. Energy efficiency continues to be the largest clean energy employer in the state; the sector is home to two out of every three Michigan clean energy jobs. Hundreds of different Michigan companies and establishments hire clean energy workers in any given year. Combined, these employers anticipate a 9 percent growth rate in 2019.

### SECTOR BREAKDOWN

Fig. 1:  
Clean Energy Technology  
Sectors, 2018

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



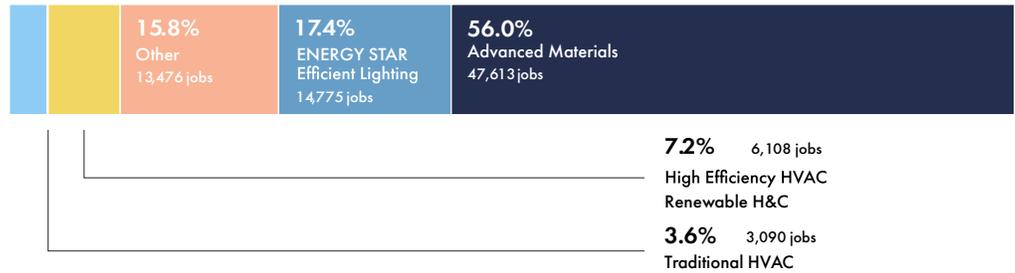
1. Unless otherwise stated, all data is based on the 2019 USEER. Energy Futures Initiative. (2019). The U.S. Energy Employment Report. Washington, DC. [www.usenergyjobs.org](http://www.usenergyjobs.org). The Data provided relies on thousands of data points provided via survey. EFI, NASEO and BWRP have 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](http://cleanjobsmidwest.com/about).

## ENERGY EFFICIENCY SECTOR IS MICHIGAN'S LARGEST CLEAN ENERGY EMPLOYER

More Michiganders work in energy efficiency -- 85,061, more than enough to sell out Ford Field -- than any other clean energy sector. Energy efficiency added 1,009 jobs in the state in 2018, a 1.2 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, and handle advanced building materials at new office towers.

Fig. 2:  
Energy Efficiency Subsectors,  
2018



## ADVANCED TRANSPORTATION U-TURN

Advanced transportation is Michigan's No. 2 clean energy sector with more than 25,304 jobs. Following job losses in 2017, the sector grew 16 percent in 2018, a gain of 3,488 jobs. Growth was led by jobs involved in the design and manufacturing of plug-in hybrid vehicles, EVs and hybrid electric vehicles.

Plug-in hybrid vehicle jobs alone now employ 5,281 people in Michigan, 1,227 more than in 2017, a 30.2 percent gain. Electric vehicle and hybrid electric vehicles jobs also saw double-digit growth rates: 6,782 Michiganders now work in EVs and 11,010 in hybrids.

## RENEWABLE ENERGY JOBS IN MICHIGAN EXPAND, BUT SOLAR EMPLOYMENT DIMS

The third-largest employer in Michigan's clean energy industry is renewable energy with 11,427 jobs. Bucking national trends, the state's renewables sector grew by 2 percent. While solar remains the largest renewable energy sub-sector in the state, with about 5,419 jobs, it experienced modest job losses (a 2 percent drop), which is consistent with solar job losses in the overall U.S. clean energy labor market. Wind ranks second in Michigan clean energy jobs behind solar with 4,783 jobs.

The state is now home to 946 bioenergy jobs, a 40 percent increase over 2017. Geothermal jobs also expanded in 2018 in Michigan.

Fig. 3:  
Renewable Energy Subsectors,  
2018

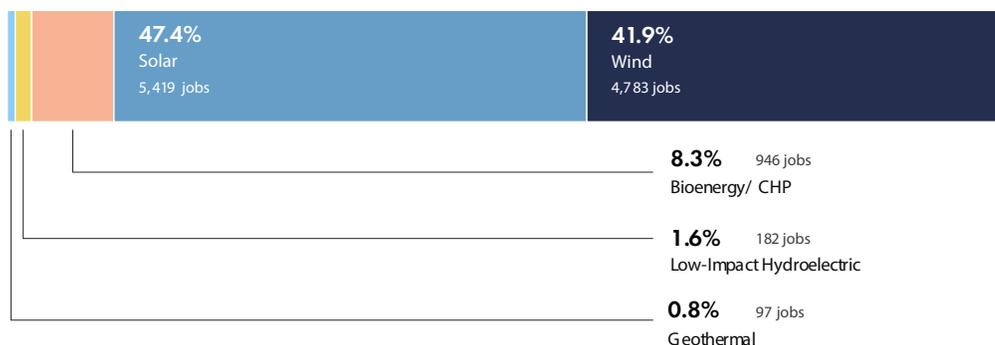
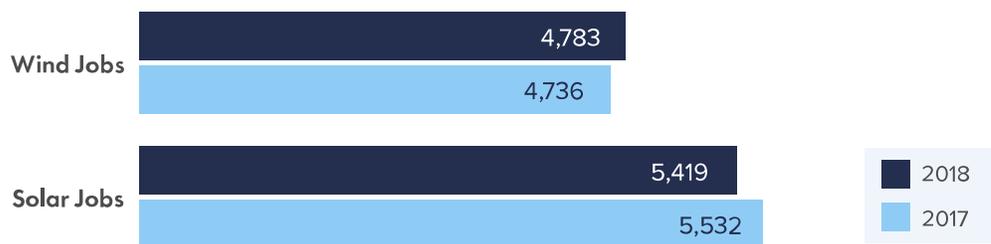


Fig. 4:  
Wind and Solar Jobs, 2018 and  
2017 Comparison



### ENERGY STORAGE LEADS ADVANCED GRID SECTOR

Advanced grid jobs employ 3,703 Michiganders. These jobs grew 1.6 percent from 2017 adding 57 jobs, and the sector ranks as the fourth-largest clean energy employer in the state. Energy storage is the largest employer in the sector with 2,390 jobs, a few dozen more than 2017. The advanced grid sector also encompasses jobs in smart grid, microgrid, and other grid modernization work.

### CLEAN FUELS JOB OPPORTUNITIES EXPAND

586 Michiganders work in clean fuels jobs. This represents a 4.7 percent increase from 2017. The clean fuels sector encompasses non-corn ethanol, non-woody biomass and other technologies not yet in wide commercial production, including algal biofuel, syngas, bioheat blends, landfill gas, and advanced biofuels.

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

Metro Area (MSA)	Total Clean Energy Employment	Renewable Energy Employment	Energy Efficiency Employment
Detroit-Warren-Livonia, MI MSA	55,447	5,281	37,214
Grand Rapids-Wyoming, MI MSA	10,702	896	7,274
Lansing-East Lansing, MI MSA	5,377	479	3,633

## CLEAN ENERGY INDUSTRY OUTLOOK

Clean energy is a significant employer in the broader Michigan economy. All told, clean energy jobs constitute 2.7 percent of all jobs across the entire state. In Michigan in 2018, each of the five major clean energy sectors added jobs, and clean energy employers expect additional growth next year. In fact, these employers project a 9 percent increase in clean energy jobs. That’s a higher anticipated growth rate than any other state in the Midwest, and this would be on top of what is already the highest number of overall clean energy jobs in the entire region.

Thanks in part to its rich history in the automotive industry, Michigan has more alternative transportation jobs than any other state. In 2018, advanced transportation jobs experienced the largest percentage increase of any clean energy sub-sector in the state, a particularly strong rebound when you consider that in 2017 alternative transportation jobs actually fell. The sector’s growth can in part be attributed to the popularity of electric vehicles. Sales of EVs are up 80 percent from 2017.

Focusing in on the renewable energy industry, Midwestern states like Michigan were positive outliers. 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 Michigan, renewable energy jobs grew by 2 percent.

### COMPARING CLEAN ENERGY JOBS TO FOSSIL FUEL JOBS

In 2018, 14,200 Michiganders worked in fossil fuel energy jobs in industries like coal, natural gas, and oil. Electric power generation jobs using fossil fuels puts 7,390 people to work, considerably less than the 11,427 jobs in renewable energy generation. Coal industry jobs in Michigan in 2018 dropped by 2 percent.

## VALUE CHAIN

When Michigan clean energy jobs are broken down by their placement in the value chain, manufacturing is home to 56.8 percent of the jobs while construction is home to 21.8 percent.

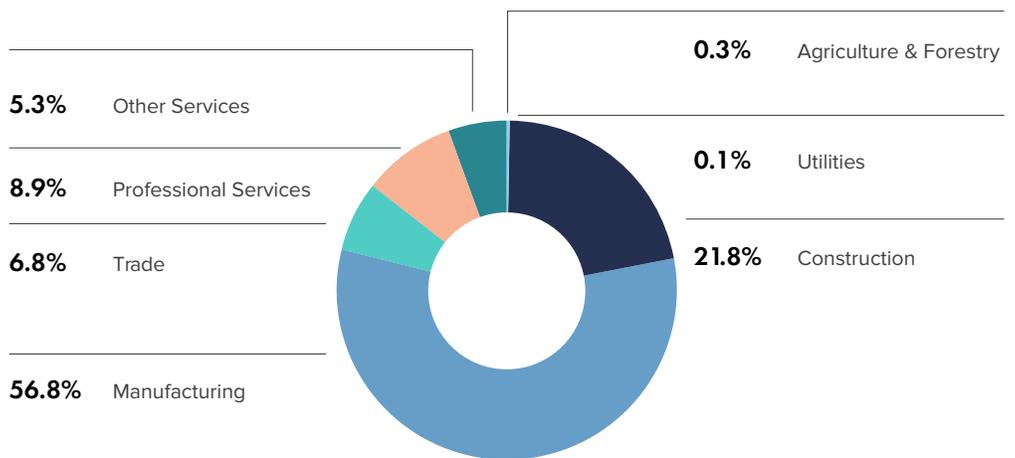


Fig. 6:  
Clean Energy Jobs Value Chain, 2018

## DEMOGRAPHICS

Throughout the state, 10.8 percent of the state's 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 the result of the U.S. Department of Defense's long-standing commitment to investing in renewable energy, energy efficiency and training programs that prepare veterans for private-sector employment in industries like solar.

Small businesses drive the state's clean energy sector – 78.5 percent of Michigan's clean energy businesses employ fewer than 20 individuals.

## SUMMARY

Clean energy workers in Michigan do much more than just install solar panels on suburban Detroit rooftops or maintain wind turbines on the Upper Peninsula. The clean energy industry in Michigan is broad, diverse, and growing. Advanced transportation jobs bounced back from a drop in 2017, with electric, hybrid, and plug-in hybrid vehicles leading the way. With more clean energy jobs than any other Midwestern state, and with 4 percent growth in 2018, clean energy will continue to play a significant role in the state's economy. Looking toward the future, employers anticipate a 9 percent growth in Michigan clean energy jobs, higher than any other state in the Midwest.

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# 2019 CLEAN JOBS MIDWEST

