

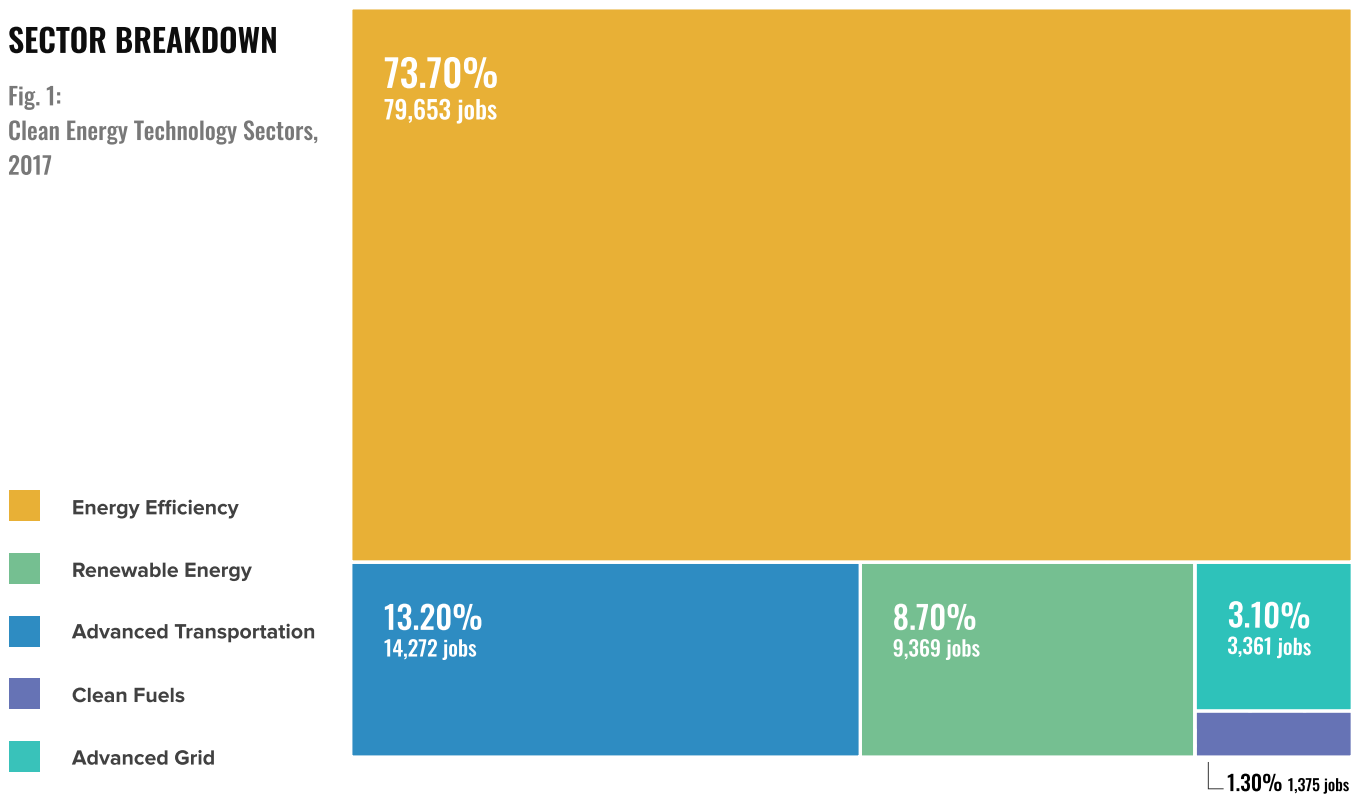
Ohio is home to 108,030 clean energy jobs

Ohio is No. 3 in Midwest in Clean Energy Jobs

Ohio is home to 108,030 clean energy jobs, third-most in the Midwest and eighth most in the whole country.¹ Energy efficiency is by far the biggest clean energy employer with 79,653 jobs. However, due to a large drop in jobs in the alternative transportation industry and as one of two Midwestern states that did not add renewable energy jobs, Ohio clean energy jobs declined 2.7 percent overall. Advanced grid jobs grew 8.2 percent and Ohio is now home to 3,361 jobs.

SECTOR BREAKDOWN

Fig. 1:
Clean Energy Technology Sectors,
2017

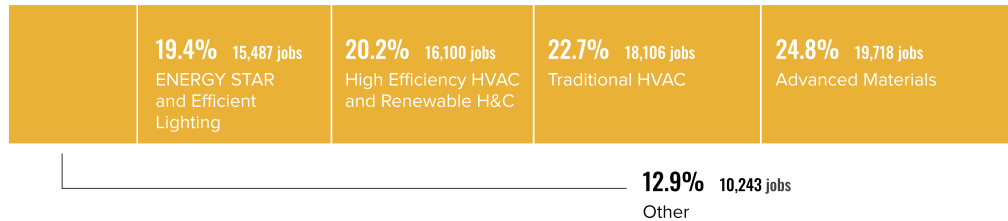


1. Unless otherwise stated, all data is based on the 2018 U.S. Energy and Employment Report (Source: National Association of State Energy Officers; Energy Futures Initiative). The report incorporates an updated methodology that captures more energy efficiency manufacturing jobs than in previous years. Unlike past Clean Jobs Midwest reports, this year's report does not count fossil fuel industry workers who also spend a portion of their time on renewable energy or energy efficiency as clean energy jobs. See the About section at cleanjobsmidwest.com/about for full details.

Bulk of Ohio's Clean Energy Jobs in Energy Efficiency

Energy efficiency makes up the largest share of the clean energy workforce with 79,653 jobs. Energy efficiency employs a wide range of Ohioans including workers who manufacture ENERGY STAR-rated appliances and who help lower energy bills by weatherizing windows and entrances at municipal and commercial buildings in cities like Columbus, Cleveland, and Cincinnati.

Fig. 2:
Energy Efficiency Subsectors,
2017



Rising EV Jobs Buck Downward Transportation Trend

Advanced transportation is Ohio's second-largest clean energy employer with 14,272 jobs in the sector. Advanced transportation was the sector that experienced the biggest drop in jobs in Ohio – 3,852 jobs lost, and a 21.3 percent decline. The sector similarly struggled across the Midwest as jobs in hybrid-electric, plug-in hybrid electric, natural gas and hydrogen, and fuel-cell vehicles all declined. Competition from Japanese and European automakers in advanced transportation has also been increasing. So, although electric and plug-in vehicles are more popular than ever, these foreign automakers have been out-competing American autos. One bright spot, however, was that electric vehicles (EVs) bucked the trend, which grew by 4.1 percent and now employs 3,597 Ohioans.

Solar Dominates Renewable Energy Sector

Renewable energy is Ohio's third-largest clean energy employer with 9,369 jobs. Ohio is one of two Midwestern states to experience a decrease in the sector – renewable energy jobs shrunk 0.2 percent. There are 8,092 solar jobs, a 3 percent decrease over the previous year, and 963 wind jobs, which is nearly identical to last year's total. Beyond wind and solar, Ohio's renewable energy sector employs workers in the geothermal, bioenergy, and low-impact hydroelectric power industries.

Fig. 3:
Renewable Energy Subsectors,
2017

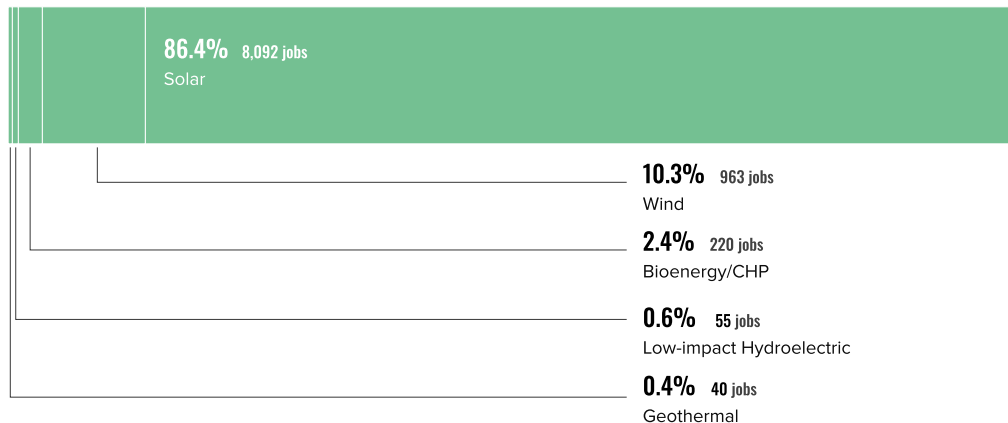


Fig. 4:
Top 3 MSAs in Clean Energy
Employment, 2017

Gains in Advanced Grid Jobs

Advanced grid jobs is Ohio’s fourth-largest clean energy employer with 3,361 jobs. Advanced grid jobs are involved in energy storage, smart grid, microgrid and other grid modernization work. Employment in these industries grew by a combined 254 jobs, an 8.2 percent growth rate.

Clean Fuels Sector Endures Job Losses

Clean fuels is the smallest clean energy employer in Ohio with 1,375 jobs. 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. Jobs in these industries declined 17.9 percent.

Metro Area (MSA)	Clean Energy Employment	Renewable Energy Employment	Energy Efficiency Employment
Cleveland-Elyria-Mentor, OH MSA	21,659	2,047	15,866
Columbus, OH MSA	16,820	1,038	12,747
Cincinnati-Middletown, OH-KY-IN MSA	15,606	1,375	11,442

**CLEAN ENERGY
INDUSTRY OUTLOOK**

Reinstatement of Clean Energy Standards Counteracted By Federal Policy Uncertainty

Since the Ohio legislature reinstated the state’s energy efficiency and renewable energy standards, those sectors have either experienced modest growth or remained relatively flat. It’s been a similar situation with advanced grid jobs. However, the combined small growth of these sectors fails to counteract significant drops in advanced transportation and clean fuels jobs. While the overall Ohio job market grew 0.8 percent, clean energy jobs shrunk nearly 3 percent. Despite reinstating the standards, Ohio lawmakers have continued to consider legislation that would roll back the existing standards, sending a message of uncertainty to the clean energy industry.

The industry faced several headwinds, including hiring difficulties and federal policy uncertainty. In 2017, 81 percent of Ohio clean energy businesses reported it was “very” or “somewhat” difficult to hire qualified employees. One reason hiring may be difficult right now is the tight national labor market due to relatively low unemployment. Other potential factors include federal policy uncertainty caused by the potential expiration of the 179D Commercial Building Energy Efficiency Tax Deduction, the U.S. EPA’s attempt to roll back fuel economy standards in the auto industry, and the anticipation of a tariff levied on solar panels. Together, these factors created general market uncertainty for many clean energy businesses in the Midwest.

Despite these headwinds, clean energy jobs in Ohio remain vitally important. They constitute nearly 2 percent of all jobs in the state,² and Ohio clean energy business owners see industry jobs growing 5.5 percent next year.

The American Council for an Energy-Efficient Economy’s State Energy Efficiency Scorecard, meanwhile, dropped Ohio two spots in its statewide ranking. The Buckeye State is down to No. 31.

2. 2017 Bureau of Labor Statistics Current Employment Statistics (CES)

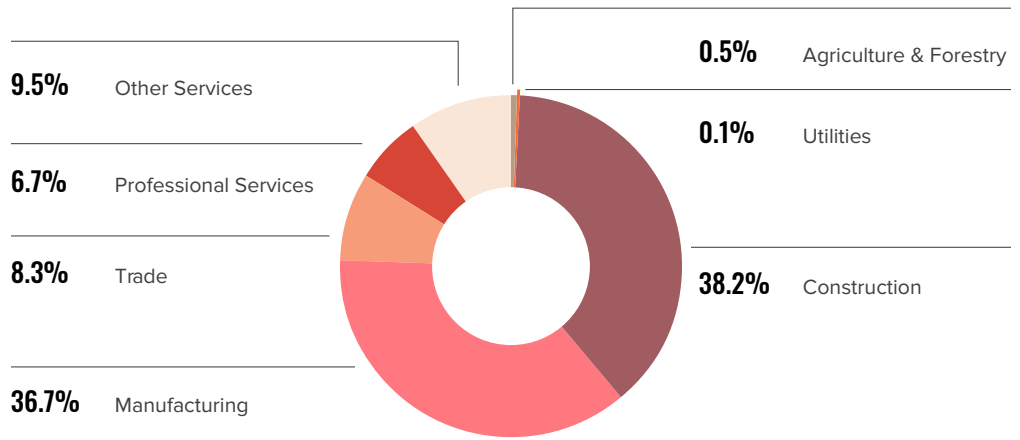
Comparing Clean Energy Jobs and Fossil Fuel Jobs

In 2017 in Ohio, 38,839 people worked in fossil fuel energy jobs in industries like coal, natural gas, and oil.³ While coal jobs dropped nearly 6 percent, renewable energy jobs dropped by less than 1 percent.

VALUE CHAIN

Clean energy jobs can also be categorized by the role they play 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 category captures jobs from multiple different clean energy sectors. For example, construction jobs can include energy efficiency jobs and renewable energy jobs.

Fig. 5:
Clean Energy Jobs Value Chain,
2017



When Ohio clean energy jobs are broken down by their placement in the value chain, construction is home to 38 percent of the jobs while manufacturing is home to 37 percent.

Small businesses drive Ohio's clean energy sector – 63 percent of clean energy businesses in the state employ fewer than 20 people.

Veterans make up a higher percentage of the clean energy work force – 12.3 percent – than the rest of the economy. By comparison, 6 percent of all workers nationwide are veterans.⁴ 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.

4. 2018 Bureau of Labor Statistics Current Population Survey (CPS)

SUMMARY

There are 108,030 clean energy jobs in Ohio, third-most in the Midwest. These jobs include wind turbine technicians in Van Wert County and high-efficiency heating, ventilation, and air conditioning (HVAC) installers, who help school districts and commercial building owners from Cincinnati to Youngstown save money on winter heating bills. As Ohioans look toward the future, clean energy is likely to play a bigger role in the state's economy each year, with more job opportunities being created in construction, energy efficiency, solar energy and other sectors and industries.