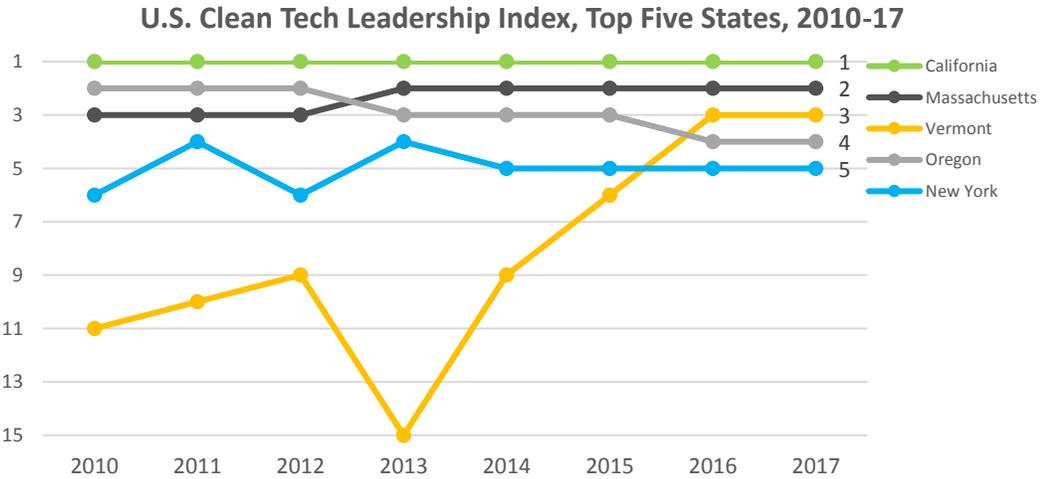


# 2017 Vermont Clean Energy Industry Report Summary

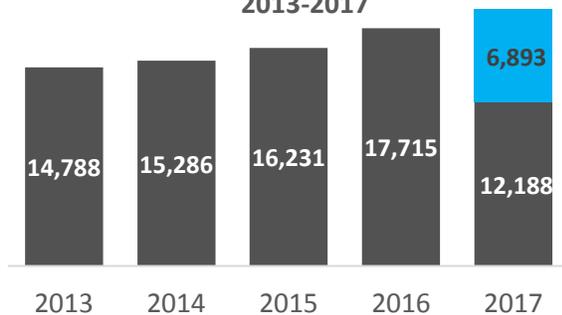
The 4th annual installment of the Vermont Clean Energy Industry Report (VCIER) has once again identified the State of Vermont as a leader for clean energy technologies and a model for economic and job growth. The Green Mountain State has quickly risen to the top of some national energy ranking systems. The *2017 U.S. Clean Tech Leadership Index* again placed Vermont third among all 50 states, and Vermont ranked second in the *Clean Energy Momentum Ranking State Progress* report released in April 2017. Clean energy jobs include such occupations as solar PV and wood pellet boiler installers, weatherization and HVAC experts, and renewable fuels producers. Key findings<sup>1</sup> in the 2017 VCIER include:



Source: U.S. Clean Tech Leadership Index, Clean Edge, Inc.

- Clean energy now provides 19,000 jobs for Vermont including more than 12,000 “full-time” jobs with strong and steady growth (29 percent) over 5 years.
- Clean energy business establishments almost doubled in the past two years.
- Energy efficiency has the largest share of employment and is the fastest growing in the clean energy sector.
- Some sub-sectors such as woody and non-woody biomass fuels experienced declines.
- Hiring qualified workers has become less difficult, but remains a significant challenge to the industry.
- Vermont’s clean energy economy continues to be a promising source of economic growth and employment opportunity.

Clean Energy Employment Growth, 2013-2017



**Since 2013 Vermont has seen 29 percent growth in clean energy employment and currently has 19,000 jobs in the state.** This means that about one in every 16 working Vermonters is employed in the clean energy industry. Even more promising is that almost 12,200 of these positions are full-time clean energy jobs. The Energy Efficiency sector constitutes the largest portion of work followed by Renewable Energy Generation and Fuels. This report’s findings also indicate that Vermont’s clean energy economy is becoming increasingly specialized. Data showed a 12 and

<sup>1</sup> Findings are derived from employment data that captures all employees from qualifying clean energy firms that spend any portion of their time supporting the research, development, production, manufacture, distribution, or installation of clean energy products and services.

18 percent increase respectively in both renewable energy and energy efficiency workers that spend all of their time supporting clean energy business activities compared to 2016.

Furthermore, **Vermont now hosts 3,751 clean energy establishments, nearly double the 2015 total.** The breakdown of businesses by sector is as follows: energy efficiency (61 percent or 2,296 establishments); renewable energy generation (35 percent or 1,296 establishments), and transportation (4 percent or 159 establishments). The highest employment growth rates over the past year came from energy efficiency and transportation with a 24 percent and 37 percent increase respectively. The wood energy sector is also an influential component of Vermont’s energy profile. About one out of every six Vermont households utilizes wood products as their primary heating source.

**With almost 11,000 employees, energy efficiency firms are the largest employer of clean energy workers across the state.** Efficient HVAC technologies accounts for the highest share of workers in this sub-technology (39 percent), whereas clean transmission technologies, such as storage, smart grid, and micro grid, accounted for roughly 9 percent. Though it appears that activity within the energy efficiency sector experienced significant shifts over 2016, this is not surprising for firms engaged in energy efficiency-related trades where the allocation of employees to primary sub-technologies within each firm is likely to fluctuate with market demand and the activities of construction/building firms.

Despite overall progress, certain sub-technologies experienced declines, with employment in renewable energy generation and fuels decreasing by about 6 percent. This is most likely the result of declines in the renewable fuels jobs. Both woody and non-woody biomass fuels respectively decreased by about 270 and 160 jobs. Job loss in these sub-technologies is likely attributable to factors including declines in the price of fossil fuels, warmer than average winters, and reduced demand in the forest product sector.

Finally, the 2017 VCEIR also reveals important labor supply trend developments. Most notable is that **although clean energy hiring has become less difficult for firms since 2016, it still remains a challenge.** The share of employers that report hiring was very difficult declined from 33 percent in 2016 to 23 percent in 2017. Despite this decline, three-quarters of employers report that finding qualified workers was difficult over the last 12 months, indicating a need for more trained workers for the clean energy labor market. Vermont’s clean energy economy is also expanding its borders, as the proportion of employers that reported primarily in-state customers declined to about three-quarters from 83 percent in 2016, while those that serve out-of-state or international clients increased by six percentage points.

**Vermont’s clean energy economy continues to remain a promising source of economic growth and employment opportunity,** as evidenced by this year’s research. Future reports will continue to track what is next on the state’s clean energy horizon.

