



NYSERDA

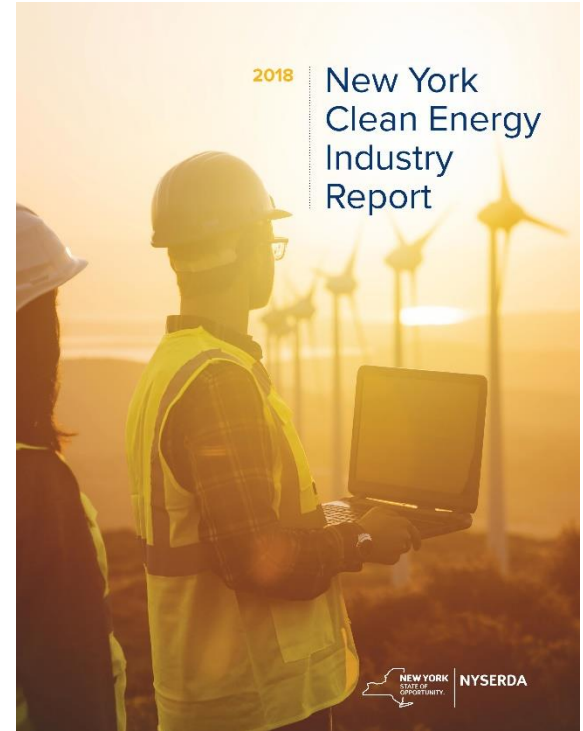


2018 Clean Energy Industry Report

October 25, 2018

Report Overview

- Measures, characterizes, and analyzes clean energy industry jobs and investments in New York State
- Builds on baseline of last year's report
- Source of insights into how New York's push toward ambitious climate goals is creating jobs and economic opportunity
- Indicates different patterns of job growth and investment across five clean energy technology categories



Employment by Technology Category



Energy Efficiency

includes lighting, ENERGY STAR® appliances (including HVAC), insulation, advanced building materials, renewable heating and cooling, and other efficient technologies



Renewable Electric Power Generation

includes solar, wind, geothermal, low-impact hydropower, and other renewable generation technologies



Grid Modernization and Storage

includes smart grid, microgrid, demand response management, and grid storage



Renewable Fuels

includes biofuels such as wood pellets and ethanol



Alternative Transportation

includes electric, hybrid, plug-in hybrid, and fuel cell/hydrogen vehicles, battery storage, as well as natural gas and other alternative fuel buses

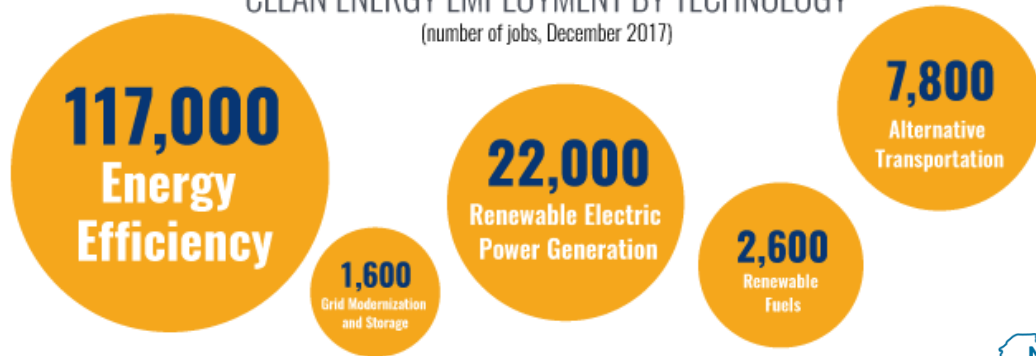
Employment Overview

over

151k clean energy jobs in 2017
across New York State

5.6k new clean energy jobs in 2017
employers expect to hire 8,000 more in 2018

CLEAN ENERGY EMPLOYMENT BY TECHNOLOGY (number of jobs, December 2017)



Overview of Findings

Over 151,000 Jobs: The clean energy sector now employs more workers than the thriving biotech and agriculture industries combined

Job Growth: New York's clean energy economy continues to see stronger job growth than the State's economy overall

- Clean energy employment grew by 3.9% from 2016 to 2017
- Overall NY employment grew 1.7% in that time

Energy Efficiency Is Key: Of the five clean energy technology categories, this one continues to be the largest in terms of jobs and investment

Technology - Highlights



Energy Efficiency: Largest number of jobs by technology category; work includes installing, manufacturing, and selling energy efficiency technologies like high-efficiency HVAC and LED lighting systems



Renewable Energy: Growth in the number of workers who spend a “majority of their time” and “all of their time” working on renewables projects: from 77.3% to 81.8% for the former and 74.0% to 77.8% for the latter

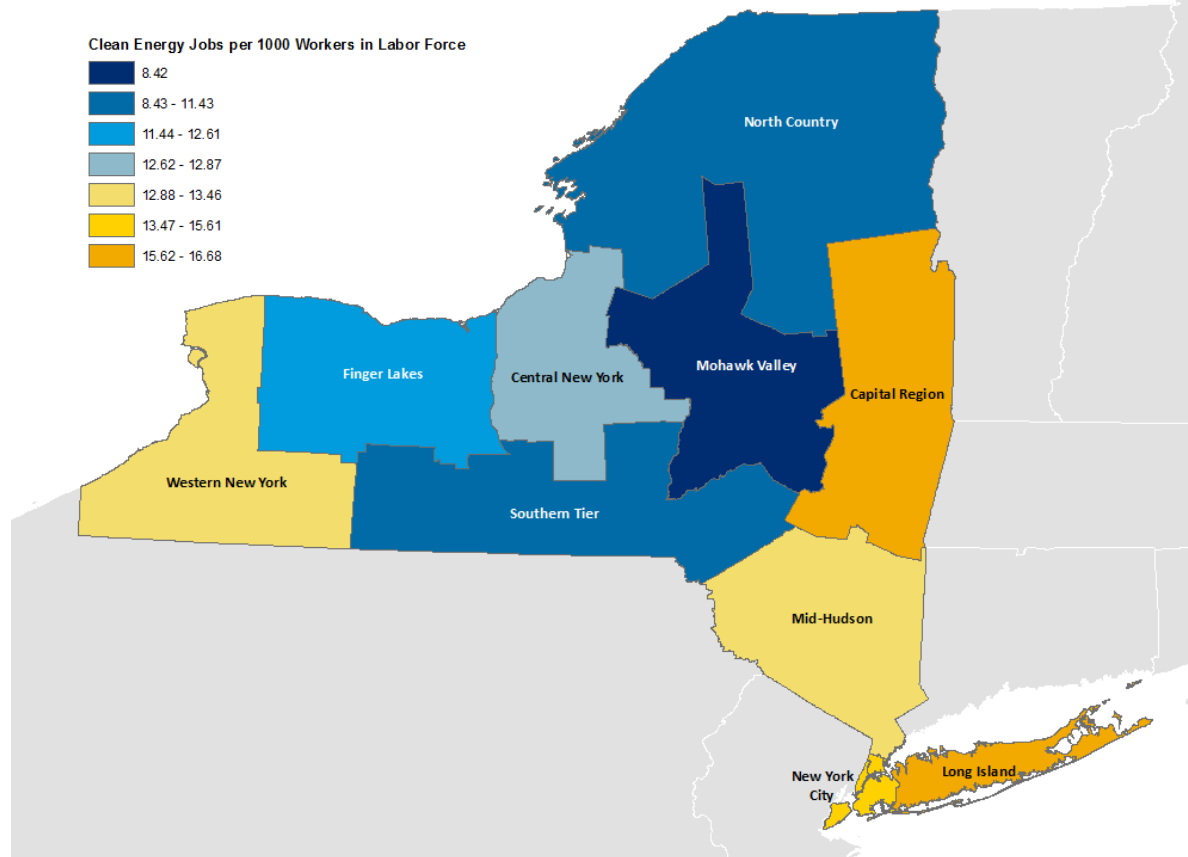


Grid Modernization and Storage: Tremendous job growth in 2017 (12.6%) and high expected growth through 2018 as well (8%). Employer expectations are consistent with climbing levels of investment in the demonstration and commercialization of these technologies

Clean Energy Employment by REDC

By REDC, the highest concentrations of clean energy workers are located in:

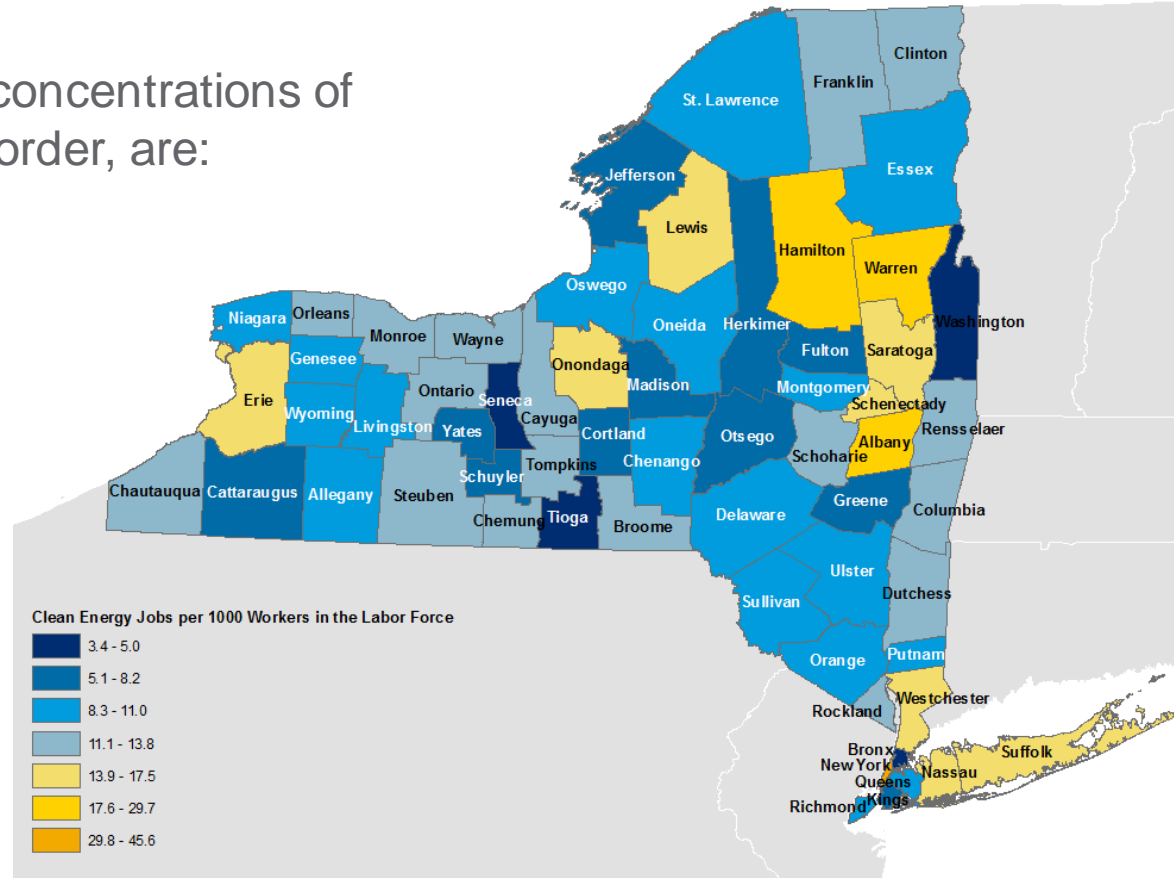
- Capital Region
- Long Island
- New York City
- Western New York
- Mid-Hudson



Clean Energy Employment by County

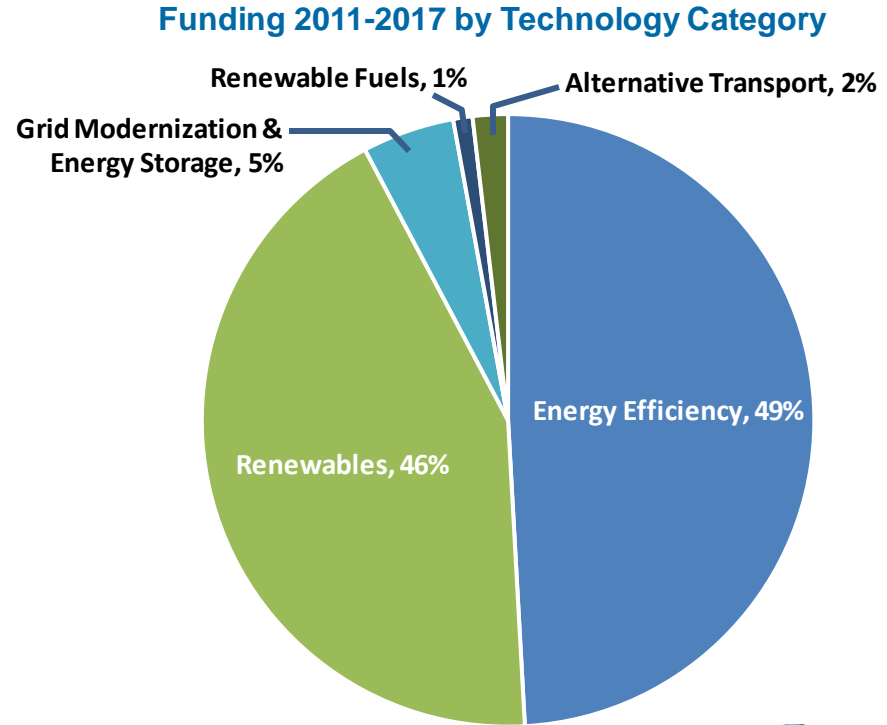
The counties with the highest concentrations of clean energy workers, in rank order, are:

- New York
- Warren
- Hamilton
- Albany



Clean Energy Funding

- New York's clean energy economy has attracted \$8.4B of funding via 2,245 deals between 2011 and 2017.
- The breakdown within that total is:
 - Energy efficiency, \$4.1B
 - Renewables, \$3.6B
 - Grid modernization, \$406M
 - Renewable fuels, \$85M
 - Alternative transport, \$155M



Workforce Needs: Hiring

- Employers see plenty of applicants, but often not with desired qualifications
- The occupations that employers find hardest to hire for are:
 - Technicians
 - Sales, marketing, and customer service staff
 - Engineers

Reasons for Hiring Difficulty Reported by Employers



NYSERDA Funding Opportunities to Support Clean Energy Worker Hiring and Training

- **\$27.5 million available** to support clean energy training and hiring clean energy workers and interns.
- NYSERDA is hosting a **webinar** about these new funding opportunities: **November 7, 2018**, 9:30 – 11:00 a.m. Click here for more information and to register: <https://bit.ly/2OOQhPm>.
- Three **NYSERDA solicitations**:
 - Energy Efficiency & Clean Technology Training (PON 3981; \$7M)
 - Energy Efficiency & Clean Technology On-the-Job Training (PON 3982; \$10M)
 - Clean Energy Internship Program (PON 4000; \$10.5M)

Next Steps

- Clean Energy Industry Report for 2019 is in development, and will cover the 2018 calendar year
- The third year of the study will more closely examine:
 - Patterns of compensation
 - Regional “hot spots” for investment and growth
 - Benchmark industries in New York State to which clean energy can be compared

Thanks for your attention

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What is a Clean Energy Job?

All employees from **qualifying clean energy firms** that spend **any portion** of their time supporting **clean energy products and services** through:

- **Research**
- **Development**
- **Production**
- **Manufacturing**
- **Distribution**
- **Installation**

* Employment totals in this 2018 Clean Energy Industry Report should not be equated to full-time equivalents.



Workforce Funding Opportunities

- Energy Efficiency & Clean Technology Training
(PON 3981; \$7M)
- Energy Efficiency & Clean Technology On-the-Job Training
(PON 3982; \$10M)
- Clean Energy Internship Program
(PON 4000; \$10.5M)

* Due dates after December 2018 are dependent upon funding availability as determined by demand.

Energy Efficiency & Clean Technology Training (PON 3981)

- \$7,000,000 Available
- Proposals Due*: December 13, 2018, March 13, 2019; May 23, 2019; August 6, 2019, October 22, 2019; January 23, 2020
- Projects funded through this PON are intended to develop and deliver training, provide hands-on experience and job placement assistance to ensure that new and existing clean energy workers have the skills businesses need
- Training activities eligible for funding include: developing, modifying or implementing curriculum; delivering training (on-line, classroom, on-site, etc.); equipment purchase for hands-on training; hiring and training trainers; marketing; internships; job placement services; pre-apprenticeships; and apprenticeships
- Proposers can include unions, colleges and universities, manufacturers, distributors, trade associations, community-based organizations, technical high schools, training and job placement intermediaries, etc.
- Maximum proposal \$250,000, 30% cost share required

* Due dates after December 2018 are dependent upon funding availability as determined by demand.

Energy Efficiency & Clean Technology On-the-Job Training (PON 3982)

- \$10 million available to eligible businesses on a first-come, first-served basis
- Funding for businesses to hire and provide on-the-job training (OJT) for workers for energy efficiency and clean technology jobs in these areas: high efficiency heating, ventilation, and air conditioning (HVAC); renewable heating and cooling; high efficiency water heating; insulation and air sealing; high efficiency lighting and controls; building automation and controls; smart grid; energy storage; and related areas
- Businesses with 100 employees or less, NYSERDA will pay 50% of a new employee's hourly wage for 16 weeks. Incentives cover 50% of the wage for 24 weeks if a business hires a worker from a priority* population
- Businesses with over 100 employees, NYSERDA will **only** pay incentives for workers from the priority populations: 50% a new employee's hourly wage for 24 weeks, if the employee is a disadvantaged worker
- The maximum OJT award amount for a business is \$100,000

* **Priority Populations** include veterans, disabled workers, low-income individuals, formerly incarcerated, Native Americans, dislocated power plant workers, and 18-24 year-old trainees in energy related job preparation programs.

Clean Energy Internship Program (PON 4000)

- \$10.5 million available over the next six years to eligible businesses on a first-come, first-served basis; approximately \$1.75 million reserved annually through 2024
- The Clean Energy Internship Program seeks to enhance the talent pipeline for energy efficiency and clean technology businesses by reimbursing employers who offer paid internship opportunities to college students or 18- to 24-year-olds that have completed or are enrolled in technical high schools, energy training or certificate programs
- NYSERDA will reimburse interns' salaries based on the size of the business:
 - For businesses with 20 or fewer employees, reimbursement of 90% of intern wages
 - 21 to 100 employees, reimbursement of 75% of intern wages
 - 100 or more employees, reimbursement of 50% of intern wages
- Internships will last a maximum of 12 weeks - in fall or spring, students can work a maximum of 18 hours per week; in summer, the maximum is 40 hours per week
- Intern wages that will be reimbursed can range from minimum wage up to \$2 above minimum wage; business can apply for a maximum of five interns per session and a maximum of 12 interns over the course of the program