Report Overview

• Measures, characterizes, and analyzes clean energy industry jobs in New York State

• Builds on previous state and national labor and workforce analysis

• Source of insights into how New York’s push toward ambitious climate goals is creating jobs and economic opportunity

• Presents indicators of job growth across five clean energy technology categories
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 2019 Clean Energy Industry Report should not be equated to full-time equivalents.
Employment Overview

Nearly 159k clean energy jobs in 2018 across New York State

7.2k new clean energy jobs in 2018; employers expect to hire 12,000 more in 2019

Clean Energy Employment by Technology (number of jobs, December 2018)

- 123,000 Energy Efficiency
- 22,000 Renewable Electric Power Generation
- 8,600 Alternative Transportation
- 2,100 Grid Modernization and Storage
- 2,600 Renewable Fuels
Employment by Technology Category

**123k**  
**Energy Efficiency - Largest Sector**  
Energy efficiency technologies are commercially available throughout the State. Includes lighting, ENERGY STAR® appliances (including HVAC), insulation, advanced building materials, renewable heating and cooling, and other efficient technologies.

**22k**  
**Renewable Electric Power Generation - Backed by Solar Market**  
Includes solar, wind, geothermal, low-impact hydropower, and other renewable generation technologies.

**8.6k**  
**Alternative Transportation - Growing Rapidly**  
Includes electric, hybrid, plug-in hybrid, and fuel cell/hydrogen vehicles, natural gas and other alternative fuel buses, and transportation storage.

**2.6k**  
**Renewable Fuels - 2.5% Growth**  
Includes biofuels such as wood pellets and ethanol.

**2.1k**  
**Grid Modernization and Storage - Fastest Growing at 35%**  
Includes smart grid, microgrid, demand response management, and energy storage.
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 81.8% to 85.3% for the former and 77.8% to 82.1% for the latter. Likely to be bolstered further by growing solar market.

Grid Modernization and Storage: Tremendous job growth in 2018 (35%).

Alternative Transportation: Almost 10% growth over the past year attributed in part due to a 25% increase in plug-in hybrid employment.
Overview of Findings

**Nearly 159,000 Jobs:** The clean energy sector now employs more workers than the thriving biotech and agriculture industries.

**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 8.9% from 2016 to 2018
- Overall NY employment grew 3.4% in that time
Employment by Job Function

Highlights:
• Nearly 75% of workers have job functions focused on installation, repair and maintenance services, or manufacturing clean energy technologies
• Job growth patterns indicate a maturing clean energy market
Key Findings - R&D

Highlights:
Half of energy efficiency and solar energy firms surveyed did some form of R&D.
Clean Energy Employment by County

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

- New York
- Warren
- Wayne
- Albany
Clean Energy Wages

Clean energy workers enjoyed wage premiums of 12%-32% for entry-level and mid-range skill levels as compared to other industries. About 70% of clean energy employees received healthcare, retirement, and paid vacation.
Workforce Needs: Hiring

Reasons for Hiring Difficulty Reported by Employers

- Lack of experience, training, or technical skills: 55%
- Difficulty finding industry-specific knowledge, skills, and interest: 16%
- Insufficient non-technical skills (work ethic, dependability, critical thinking): 14%
- Insufficient qualifications (certifications or education): 14%
- Location: 14%
- Other: 11%
- Cannot pass employment screening: 9%
- Cannot provide competitive wages: 8%
- Competition/ small applicant pool: 5%
- Economy/structural problem: 5%
- Cultural fit: 3%

• Employers see plenty of applicants, but often not with desired qualifications

• The occupations that employers find hardest to hire for are:
  - Technicians or mechanical support
  - Sales, marketing or customer service
  - Management (directors, supervisors, vice presidents)
NYSERDA has initiated programs that will benefit more than 33,000 New Yorkers

- Energy Efficiency & Clean Technology Training — **28,500 to be trained**
- Building Operations & Maintenance — **4,810 to be trained**
- Energy Efficiency & Clean Technology On-the-Job Training — **126 hired/trained**
- Clean Energy Internship Program — **159 Interns hired/supported**
Energy Efficiency & Clean Technology Training (PON 3981)

• Projects 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

• Preference for proposals to support Priority Populations

• Example: Green City Force with its partners will deliver an energy boot camp, a pre-apprenticeship training model with career support, peer mentorship, and job placement coordination for up to 45 graduates of their AmeriCorps program

• Apply: https://on.ny.gov/2Sa2jiZ
Energy Efficiency & Clean Technology
On-the-Job Training (PON 3982)

• Up to $100,000 per business, 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
• Businesses with 100 employees or less, NYSERDA pays 50% of a new employee’s hourly wage for 16 weeks. Incentives cover 50% of the wage for 24 weeks for a worker from a priority* population
• Businesses with over 100 employees, incentives for workers from the priority populations only
• Example: Halco Inc. has hired 12 new employees and provided on-the-job training for high-efficiency HVAC positions ranging from auditors to insulations installers—Halco has targeted its hiring efforts to recruit priority populations
• Apply: https://on.ny.gov/2tarBnh

* 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 to eligible businesses on a first-come, first-served basis
• Creating a talent pipeline for clean energy 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 funded for a maximum of 12 weeks, business can apply for a maximum of five interns per session and a maximum of 12 interns over the course of the program
• Example: Kinetic Communities Consulting — hired two interns for Summer 2019 to assist with NYCHA energy efficiency project. Interns also job-shadowed clean energy leaders weekly
• Apply: https://on.ny.gov/2Scqi0X
Building Operations and Maintenance (PON 3715)

- $10 million available, up to 50% of the cost for eligible projects, with a cap of $400,000 per application
- This program is designed to help employers and building owners develop training projects that create the educational strategy, on-site training framework, and tools needed to advance the skills of building operations and maintenance workers and prepare new workers beyond conventional classroom training
- Proposals must be for buildings or groups of buildings—including partnerships between businesses with common training needs—with annual energy expenditures of $1 million or more
- Apply: https://on.ny.gov/2nfMzlh