Going Green
A Sample of Jobs in New York’s Green Economy

Click
Links below to explore various Green careers.

Solar Power
Wind Power
Energy Efficiency
Biofuels
Transportation
Smart Grid
Going Green
A Sample of Jobs in New York’s Green Economy

Solar Power
- Construction Equipment Operators
- Electrical Equipment Assemblers
- Electricians
- Laborers
- Welders

Wind Power
- Wind Energy Careers
- Computer-controlled machine tool operators
- Customer Service Representatives
- Environmental Engineers
- Industrial Truck Drivers
- Maintenance and repair workers
- Structural Iron & steel workers

Energy Efficiency
- Building Inspectors
- Boilermakers
- Carpenters
- Energy Auditors
- Heating, air conditioning & refrigeration mechanics & installers
- Plumbers

Biofuels
- Agricultural inspectors
- Chemical engineers
- Chemical technicians
- Chemists
- Farm product purchasers
Transportation

- Civil Engineers
- Dispatchers
- Electricians
- Engine assemblers
- Metal fabricators
- Welders

Smart Grid

- Technology Goes Green
- Computer software engineers
- Electrical engineers
- Electrical power line installers
- Machinists
- Operating engineers
- Team assemblers

www.nycareerzone.org
www.labor.ny.gov
A Welder uses hand-welding or flame-cutting equipment to sever, weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.

Welders require skills in mathematics, critical thinking, time management, equipment selection, active listening, and reading comprehension.

Welders should have mechanical, design, mathematics, engineering & technology, building & construction and the English language.

Welders typically have a high school diploma and additional on-the-job training or vocational/technical training. Education requirements can be met through college, trade school and/or apprenticeships.

Employment of welders is expected to grow about 5% over the next seven years. Welders earn on average $12-$22 per hour.

Employers are looking for skilled welders. Skilled welders are not as affected by automation as other manufacturing related trades people because their skills are easily transferable from one industry to another.

Welders are participating in the green economy in a number of ways.

Fume Extraction Filtration System—controls exhaust fumes from welding released into the environment.

Waste Management and Recycling—recycling empty welding wire spools.

Energy Efficient Equipment—MIG welding tips for robotic or semi-automated welding application.

Welding Techniques for Green Products—laser beam welding for fuel cells.

Environmental Procedures Management—ISO 14001 Accreditation—benchmark for quality assurance.

For additional information on welding go to www.nycareerzone.org or Job Zone on the New York State Department of Labor’s website.
Below is a partial list of welding training institutions in New York State. For detailed information for a training provider located near you, visit your local One-Stop Center.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Location</th>
<th>Training</th>
<th>Website</th>
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</thead>
<tbody>
<tr>
<td>Onondaga Cortland Madison Board of Cooperative Educational Services</td>
<td>4500 Crown Road Liverpool, NY</td>
<td>Welding I, II, III &amp; AWS Certification</td>
<td><a href="http://www.ocmboces.org">www.ocmboces.org</a></td>
</tr>
<tr>
<td>Modern Welding School</td>
<td>1842 State Street Schenectady, NY</td>
<td>American Welding Society Certification</td>
<td><a href="http://www.modernwelding.com">www.modernwelding.com</a></td>
</tr>
<tr>
<td>Capital District Educational Opportunity Center</td>
<td>145 Congress Street Troy, NY</td>
<td>AWS and NYS-DOT Certification</td>
<td><a href="http://www.hvcc.edu">www.hvcc.edu</a></td>
</tr>
<tr>
<td>Apex Technical School</td>
<td>635 Avenue of the Americas New York, NY</td>
<td>Combination Welding Technology</td>
<td><a href="http://www.apextechnical.com">www.apextechnical.com</a></td>
</tr>
<tr>
<td>SUNY College of Technology at Alfred</td>
<td>10 Upper College Drive Alfred, NY</td>
<td>A.A.S. Welding</td>
<td><a href="http://www.alfredstate.edu">www.alfredstate.edu</a></td>
</tr>
</tbody>
</table>

Welders help support the production and growth of other green industries like biofuels and wind power.
What is an Energy Auditor?
Energy auditors inspect energy efficiency levels. During the inspection, the auditor determines energy consumption, charts heating and cooling costs, and tests HVAC systems to determine if they are operating at peak proficiency. Following an audit, an energy auditor offers suggestions to improve energy efficiency.

Qualifications
Energy auditors need to have an array of qualifications, and the requirements vary among companies. A background and skills in construction, engineering, and HVAC training aid an energy auditor. Green building training and knowledge of energy efficiency are a must. Even a business background often comes in handy and in sometime required.

Activities and Skills of Junior Level Energy Auditors

Primary Activities:
• Accurately collect information on building systems and equipment, including schematics of piping and air handling systems.
• Interview building site staff for background information and to fill in missing data.
• Draw schematics of piping and air handling systems.
• Read and interpret construction drawings.
• Perform costing and savings calculations for energy efficiency and conservation opportunities.
• Produce concise, accurate, and grammatically correct written reports.
• Continuously contribute to software system internal bug reports. Suggest system improvements.

Primary Skills:
• Excellent written and oral English.
• Work effectively with incomplete information.
• Time conscious.
• Familiarity with building codes and standards.
• Strong computer skills.
• Able to complete projects on budget and on time.
Energy Auditor Certifications

AEE Certified Auditors
To become a Certified Energy Auditor (CEA), offered by the Association of Energy Engineers, a candidate must meet eligibility requirements. To qualify, a candidate must meet one of these criteria:

- A four-year degree from an accredited university or college in engineering or architecture or be a registered Professional Engineer or Registered Architect;
- A four-year non-engineering degree with four years experience in an energy management position;
- A two-year technical degree with five years experience in energy management;
- Ten years experience in energy management; or
- Being a current Certified Energy Manager

Candidates are required to pass an examination.

Building Performance Institute Certification
BPI analysts pass a 100-question exam and score at least 70 percent. BPI does not require formal training but does recommend classroom coursework. BPI auditors must recertify every three years.

RESNET Auditors Certification
To be a RESNET auditor an examination is required. Auditors conduct two supervised ratings and take continuing education.

Provisional Certification
In some circumstances, auditors without required educational background may be able to apply for a provisional certificate. After completing work experience and passing an examination the candidate can be certified.

Average Annual Earnings

Energy auditors earn an average of $60,000 to $77,000 per year depending on their position, experience and employer.

For more information go to:

www.nycareerzone.org or www.labor.ny.gov
## A Sample Wind Career Pathway

<table>
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<tr>
<th>Occupations</th>
<th>Duties</th>
<th>Necessary Skills</th>
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<tr>
<td>Wind Technician 1</td>
<td>Repair and maintain wind turbines.</td>
<td>Must be able to work outdoors in inclement weather, climb ladders without assistance, and work at heights greater than 100 feet from the ground surface.</td>
</tr>
<tr>
<td>Wind Technician 2</td>
<td>Repair and maintain wind turbines.</td>
<td>Must be able to work outdoors in inclement weather, climb ladders without assistance, and work at heights greater than 100 feet from the ground surface.</td>
</tr>
<tr>
<td>Wind Technician 3</td>
<td>Repair and maintain wind turbines.</td>
<td>Must be able to work outdoors in inclement weather, climb ladders without assistance, and work at heights greater than 100 feet from the ground surface.</td>
</tr>
<tr>
<td>Lead Wind Technician</td>
<td>Troubleshoots mechanical/technical problems, oversees activities, supervises staff.</td>
<td>Positions often require at least one year of experience as a Wind Technician 2.</td>
</tr>
<tr>
<td>Inventory Manager</td>
<td>Inventory management, parts order &amp; replenishment &amp; parts shipment.</td>
<td>BA in engineering or three to five years related experience. Honesty, integrity, effective communication skills, database computer skills, physical ability to lift 50 lbs., math &amp; reasoning skills.</td>
</tr>
<tr>
<td>Assistant Manager</td>
<td>Assists site manager with coordinator of projects.</td>
<td>Experience in wind industry. Associate or bachelor’s degree usually required. Some employers prefer engineering degrees.</td>
</tr>
<tr>
<td>Manager</td>
<td>Supervision and coordination of project work.</td>
<td>Wind energy systems experience, project management skills, IT knowledge, good written and oral communication skills, leadership/management skills and cost/contract experience.</td>
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</tbody>
</table>

## Wind Training Examples

<table>
<thead>
<tr>
<th>Wind Courses</th>
<th>Description</th>
<th>Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinton County Community College</td>
<td>A.A.S Wind Energy &amp; Turbine Technology</td>
<td>The Wind Energy &amp; Turbine Technology program is designed to prepare students for employment in the Wind Turbine industry. Students who complete this two-year program earn the Associate in Applied Science (AAS) degree.</td>
</tr>
<tr>
<td>SUNY Ulster</td>
<td>Introduction to Small Wind Systems and Small Wind Installation workshop.</td>
<td>This week long class targeted to interested homeowners, businesses, and contractors offers an opportunity to learn first hand how to properly site, specify, permit, and install a residential scale wind energy system. Day one will be an overview of wind turbines for those who simply want more information. This course is approved for The Training of Veterans and requires a basic understanding of electricity.</td>
</tr>
</tbody>
</table>
There are employment opportunities in the wind industry.

**Did You Know?**

The wind industry added 35,000 jobs in 2008. Today, there are over 85,000 people employed in the wind industry nationally. This is an increase of 50,000 people in one year.

New York State has more than 600 wind turbines.

It is projected that two technicians will be needed for every 10 turbines.

For information on the skills and education required for specific jobs go to:

www.nycareerzone.org

or the New York State Department of Labor.

www.labor.ny.gov
Career Examples of Green IT

• Data Center Design & Management
IBM’s Academic Initiative is offering a new two year data center management degree in Nebraska and is working with Syracuse University to house & study data centers.

• Telepresence & Virtual Meetings
Cisco and HP are developing new products to reduce business travel and promote remote employment through telepresence and virtual meetings.

• Reducing E-Waste
The EPA is asking business to consider environmental impact when developing new products and services and to recycle or donate older electronic equipment.

• Carbon Management
Software systems are being developed to assist businesses with tracking, reporting, managing and monetizing corporate carbon emissions.

Information Technology Careers in a Green World

Green IT or “clean-tech” is a field that explores the connections between two growing trends - the spread of environmental concern across New York State, and the use of digital tools and techniques for manipulating information. Information technology is transformational—it affects many different industries ranging from communication to energy production. Green IT examines the role of information technology in supporting human responses to the world's current challenges.

The Information technology industry is responding to the call to green their field. By reducing e-waste, designing and managing green data centers and helping to reduce our carbon footprint through Green IT 2.0, the technology field can impact our environment and help New York State become a national leader in the further use of Green IT.

For information on the skills and education required for specific IT jobs go to: www.nycareerzone.org or the New York State Department of Labor.
**Computer & Information Systems Managers Labor Market Information**

**Job Description**
Plan, direct or coordinate activities in electronic data processing, information systems, systems analysis, and computer programming.

**Knowledge Required**
Critical thinking, judgment and decision making, systems analysis, management of personnel resources, reading comprehension, speaking & active listening.

**Education**
Most occupations require at least a four year's bachelor degree. However, some do not. Considerable work related experience is usually needed.

**Wages & Outlook**
Average annual wages range from $69,000-$161,000 per year. This is an in-demand occupation with an expected 21,400 employed by 2016.

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**Education**
- Long Island University—CW Post Campus
- CUNY Brooklyn College
- SUNY College of Technology at Alfred
- New York Institute of Technology

These are just four of countless education and training programs offered in New York State.

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**Did You Know?**

STEM
Science, Technology and Engineering fields are all areas that are “Going Green.”

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For information on the skills and education required for specific IT jobs go to: www.nycareerzone.org or the New York State Department of Labor.

WWW.LABOR.NY.GOV