

#### What is the Energy Industry?

- Fossil Fuels and Renewable Energy
- Oil, Coal, Natural gas, Nuclear
- Wind, Solar, Water, Biomass, Geothermal
- Fuel cells, Energy Storage and Transmission

#### Job Functions

Engineers, scientists, architects, farmers, technicians, operators, mechanics, lawyers, businesspeople, sales workers, human resource and public affairs specialists, as well as a host of administrative support workers make their living by researching, developing, installing, and promoting renewable energy.

#### Typical Job Titles

Chemical Engineers, Chemists, Coal Miners, Divers and Diving Technicians, Electricians, Energy Consultants, Energy Transmission and Distribution Workers, Geologists, Geophysicists, Geotechnical Engineers, Materials Engineers, Mining Engineers, Nuclear Engineers, Nuclear Reactor Operators and Technicians, Petroleum Engineers, Roustabouts, Surveyors

#### Skills Sought

- Students who are interested in becoming renewable energy engineers should enjoy solving problems, developing logical plans, and designing things.
- They should have a strong interest and ability in science and mathematics, as well as knowledge of renewable energy technologies.
- Engineers often work on projects in teams, so prospective engineers should be able to work well both alone and with others.
- Other important traits include strong communication skills and an interest in continuing to learn throughout their careers.
- Can problem solve and think outside the box; can demonstrate these skills during interviews and on the resume

#### Successful Interviews

- Need to have a passion for your accomplishments and the industry
- Demonstrate a desire to not accept status-quo; that you went above and beyond the requirements
- CMU students have an extra strength...the interdisciplinary nature of many activities, organizations and projects. Communicate how you worked with many different majors during Booth or Student Government
- Know what the company/agency (for which you are interviewing) does and have a base line knowledge of the industry

#### Selected Employers

- |                                    |                   |                        |                                   |
|------------------------------------|-------------------|------------------------|-----------------------------------|
| * Solar Energy International (SEI) | *Solar Nexus      | *Green Mountain Energy | *Consolidated Edison              |
| *Westinghouse Energy               | *Chevron          | *Schlumberger          | *Shell      *Occidental Petroleum |
| *Nevada Geothermal                 | *Affordable Solar | *Blue Sky Energy       | *DNV KEMA Energy & Sustainability |

#### Trends and labor market

- One of the biggest technology trends is Smart Grid Technology. Electric utility companies across the country are incorporating Smart Grid technologies to their transmission and distribution systems. Smart Grid is technology that connects the generation, transmission, and distribution of electric power all the way through to each customer's meter. This will allow utility companies to move power where it is needed throughout their delivery base in a more efficient and Economical way. Smart Grid proponents say it will also allow end-users to use electricity more economically.
- The outlook for jobs in alternative energy sectors depends on the sector. Some sectors, such as solar, are expected to

experience much higher growth than others. Of the nearly 24,000 new jobs created, about 77 percent are newly created positions. Nearly half of solar firms expect to add workers in the next year, signaling continuing growth in this sector.

- Wind energy has had the most success, when it comes to connecting to the national grid and supplying the nation with electricity. The EIA predicts that while wind energy will continue to produce a larger percentage of energy than the other renewable energy sources, solar energy will exhibit the highest growth rate in the decades to come.

## **Resources & Associations**

### **Association of Energy Engineers**

4025 Pleasantdale Road, suite 420

Atlanta, GA 30340

Tel: (770) 447-5083

E-Mail: [info@aeecenter.org](mailto:info@aeecenter.org)

<http://www.aeecenter.org>

### **Energy Information Administration ((EIA))**

1000 Independence Avenue, SW

Washington, DC 20585-0001

Tel: (202) 586-8800

<http://www.eia.doe.gov>

### **The Institute for Energy Research (IER)**

1100 H St. NW, Suite 400

Washington, DC 20005

Tel: (202) 621-2950

<http://www.instituteforenergyresearch.org>

### **American Public Power Association**

2301 M Street, NW

Washington, DC 20037-1484

Tel: (202) 467-2900

<http://www.appanet.org>

### **American Wind Energy Association**

1501 M Street, NW, Suite 1000

Washington, DC 20005-1769

Tel: (202) 383-2500

<http://www.awea.org>

### **Geological Society of America**

P.O. Box 9140

Boulder, CO 80301-9140

Tel: (303) 357-1000

<http://www.geosociety.org/>

### **National Hydropower Association**

25 Massachusetts Avenue, NW, Suite 450

Washington, DC 20001-7405

Tel: (202) 682-1700

E-mail: [help@hydro.org](mailto:help@hydro.org)

<http://www.hydro.org>

### **National Renewable Energy Laboratory**

1617 Cole Boulevard

Golden, CO 80401-3393

Tel: (303) 275-3000

<http://www.nrel.gov>

### **Nuclear Energy Institute**

1776 I Street, NW, Suite 400  
Washington, DC 20006-3708  
Tel: (202) 739-8000  
<http://www.nei.org>

### **Solar Energy Industry Association**

505 Ninth Street NW, Suite 800  
Washington, DC 20004-2167  
Tel: (202) 682-0556  
E-mail: [info@seia.org](mailto:info@seia.org)  
<http://www.seia.org/>

### **U.S. Department of Energy**

1000 Independence Avenue, SW  
Washington, DC 20585-0001  
<http://www.energy.gov>

**To learn more about the field**, read publications such as:

- *Windpower Monthly* (<http://www.windpowermonthly.com/windpower-weekly>)
- *Solar Industry* (<http://www.solarindustrymag.com>)
- *Solar Today* (<http://ases.org>)
- *International Journal on Hydropower and Dams* (<http://www.hydropower-dams.com>)
- *Geothermal Education Weekly* (<http://www.geo-energy.org/updates.aspx>)
- *Fuel Cell & Hydrogen Energy Connection* (<http://www.fchea.org>)
- *Energy Society* (<http://www.energysociety.org>)

**Visit the following Web sites for job listings:**

- <http://www.nspe.org/resources/career-center>
- <http://www.awea.org>
- <http://www.ases.org>
- <http://www.seia.org/solar-jobs>
- <https://getintoenergy.jobs/>
- <https://hydrofoundation.org/opportunities/>
- [Jobs in fuel cells.](#)

Participate in internships or part-time jobs.

Visit <http://energy.gov/eere/education/clean-energy-jobs-and-career-planning> for information on internships, fellowships, and scholarships.

### **Citations:**

Tomkies, Kelly. *Energy. Career Launcher*. New York: Ferguson, 2011. September 4, 2014.

<http://ebooks.infobaselearning.com/View.aspx?ISBN=9781438139005&Instl>

Vault. *Vault Guide to Alternative Energy Jobs. Vault Guides to Jobs*. New York: Vault, 2014. September 4, 2014.

<http://ebooks.infobaselearning.com/View.aspx?ISBN=9781581319583&Instl>

Vault. *Vault Guide to Alternative Energy Jobs. Vault Guides to Jobs*. New York: Vault, 2014. September 4, 2014.

<http://ebooks.infobaselearning.com/View.aspx?ISBN=9781581319583&InstlD>