

Green Careers Resource Guide



Updated for Fall 2009

Jim Cassio

Introduction to the Green Careers Resource Guide

This free e-book on green and environmental careers began life as one of my research bibliographies. By 2007 it had evolved into a handout for the International Career Development Conference, and now it continues to evolve as a living e-book publication with several updates per year. This Fall 2009 Edition is the most significant update yet. With the infusion of jobs from cleantech industries, this resource guide now identifies over 300 occupations that can lead to green jobs and green careers.

This United States-based resource guide answers basic green career questions such as: What is a green job? What is sustainability? Where are the green jobs? What occupations can lead to green jobs? What are the best online resources for people who want a green job or career? The resource guide includes links to hundreds of industry and occupation-specific resources as well as descriptions of all major green niche employment websites.

In 2008, career counselor/author Alice Rush and I began working on a new career guidance publication entitled:

Green Careers: Choosing Work for a Sustainable Future

That 360-page paperback book was published in April 2009 by New Society Publishers and is now available from major booksellers.

What's the difference between the free resource guide and the new paperback book? The paperback book is mostly devoted to profiling 90 different career fields, including interviews with nearly 70 professionals who work in those green careers. That also includes green entrepreneurs.

Using both publications makes the most sense because downloading the latest resource guide will give you the most up-to-date information on resources, while the paperback book has over 300 pages of very unique career content to help you explore your green career choices.

Feedback is always welcome.

Regards,

-Jim Cassio

Copyright © 2009 Jim Cassio



Terms of Use

The *Green Careers Resource Guide* is protected by U.S. and international copyright laws and treaties. While Jim Cassio invites you to use this resource guide, this permission is intended for your personal use, or to make the information freely available to your students, library customers, career center customers, or career counseling clients. When sharing the material, appropriate credit should be given to Jim Cassio or, if otherwise indicated, to the author(s) of any particular article. The information may not be otherwise copied, displayed, distributed, downloaded, licensed, modified, published, reposted, reproduced, reused, sold, transmitted, used to create a derivative work, or used for public or commercial purposes without the express written consent of the author(s). This resource guide may reside as a PDF e-book on computers in career centers, classrooms, or libraries for all interested persons to use. However, anyone who wants a copy for their own computer (or other device) should download their own free copy from: www.cassio.com Please do not post an electronic copy of the resource guide on any website for downloading purposes. Please do not print the resource guide unless you have carefully considered your options (and the environment).

Table of Contents

	page
What is a green job?	4
What is sustainability?	5
What is a sustainable organization or green business?	6
What is the green industry?	7
What is cleantech?	8
What is renewable energy?	9
Where are the green jobs?	10
Overview	10
Industries where most green jobs are found in the private sector	11
Types of nonprofit organizations with green jobs	12
Types of public sector/government employers with green jobs	13
How many green jobs are there?	14
What types of occupations can lead to green jobs?	15
Overview	15
Using O*NET to research and explore occupations	16
Career clusters	16-28
Best online resources for green career exploration?	29
U.S. Department of Labor	29
State Labor Market Information Divisions	30
Other sources	30
Career assessment tests	31
Best online resources for green job hunting?	32
Overview	32
General purpose employment websites	33
State job banks	33
Local/regional employment websites	33
Local/regional newspaper online classified ads	33
Niche employment websites serving specific industries or professions	34
Employer websites	38
Job search engines	39
Networking websites	39
Offline networking	40
Green education and training options	41
Overview	41
Finding a school or program	42
Evaluating a school or program	42
Industry and occupation-specific resources	43-61
Articles	
Green jobs and the economic stimulus plan	62
Introduction to carbon-neutral and cap-and-trade	64
Greening a non-green employer	65
Being a green entrepreneur	67
Informational interviews	69
A strategic plan for your career	71
Older workers: use age to your advantage	73
How green is recycling?	74
About the author	76

What is a green job?

If you had asked me this question five or six years ago, I would have said that green jobs are for people with green thumbs - such as gardeners, groundskeepers, landscapers, and horticulturists. But today, when we talk about green jobs, we're generally talking about *environmentally-green* jobs. Today's green jobs are typically associated with these types of work activities:

- Alternative fuels and alternative fuel vehicles
- Energy efficiency, including green building and sustainable design
- Environmental protection and preservation, including conservation
- Organic and recycled products
- Renewable energy, including solar, wind and geothermal
- Sustainable and organic agriculture
- Sustainable business practices, including cleantech

Is there a definition of green jobs?

There are many definitions of green jobs, with most reflecting the limited experience that lay people and experts alike have in terms of the occupations and industries with which they are familiar. Although I promote an inclusive view of green jobs in this resource guide, my first attempt to define green jobs admittedly reflected a strong science bias (environmental protection and preservation). Most attempts to define green jobs have tended to be somewhat narrow in scope. For example, there are some experts who will argue that green jobs are defined as jobs in the renewable energy and energy efficiency sectors. But as important as those sectors are to the green economy, they still only amount to two slices of the pie.

In early 2009, the White House Task Force on the Middle Class came out with a report on green jobs that included this somewhat more inclusive *working definition*:

Green jobs provide products and services which use renewable energy resources, reduce pollution, conserve energy and natural resources, and reconstitute waste.

Even more recently, a White House official stated that the Obama administration defines green jobs as:

Good jobs that are good for the environment.

What is a green collar job?

Sometimes this term means nothing more (or less) than a green job, or a means of identifying green jobs from among the white collar, blue collar and service sector jobs. Other times it means a blue collar job that is environmentally green. There is also a social justice approach to defining green collar jobs that tends to add phrases like "good jobs that are good for the environment, that will support a family, and that don't require a college degree." But, however some groups may choose to define green collar jobs, there is no widely agreed-upon definition - even if they don't seem to recognize that fact themselves.

What is sustainability?

Sustainability is the capacity to endure. That includes biological systems that must remain diverse and productive over time. For humans, sustainability means long-term survival and well-being, which in turn depends on the well-being of the natural world and the responsible use of our natural resources.

Is there a definition of sustainability?

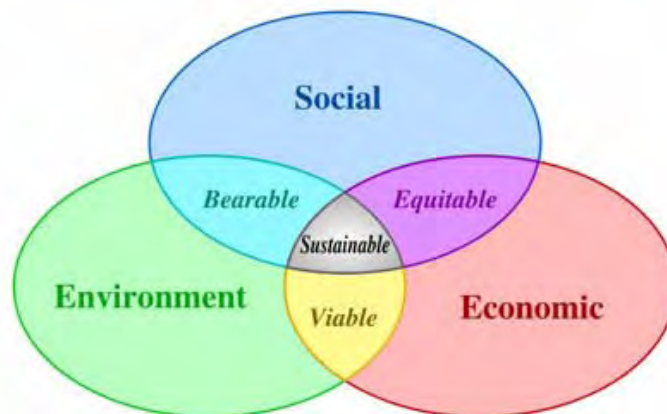
There are many definitions of sustainability. This is the original definition, now 25 years old:

Meeting our needs while not compromising the ability of future generations to meet their needs.

-United Nations World Commission on Environment and Development (Brundtland Commission)

Another way of understanding the concept of sustainability is assisted by the graphic below. It can be said that when you have your social, environmental and economic priorities in balance, then you have the conditions needed for sustainability.

Those three priorities are often referred to as the *three pillars* of sustainability. Some refer to the three pillars as the 3 P's: people, planet and profit. The three pillars of sustainability also serve as the elements of a *Triple Bottom Line* for sustainable organizations and green businesses.



What is a sustainable organization or green business?

A sustainable organization or green business is an organization that is taking responsibility for their impact on the environment.

Increasingly this includes *carbon management* in order to (collectively) reduce the factors that contribute to climate change. Thus sustainable organizations often measure and manage their carbon footprints, as well as operate on the values reflected by a Triple Bottom Line - i.e. having their social, environmental and economic priorities in balance. Therefore, jobs with sustainable organizations (or green businesses) are green jobs.

Sustainable organizations and green businesses may come from any industry or sector. There are no legal requirements for an organization that chooses to call itself sustainable or green. Thus there is some *greenwashing* by organizations that misrepresent themselves or their products as being green when they aren't really green. In fact, the first significant study of greenwashing by the TerraChoice Group looked at more than 2,000 different green products and found that 98% of them were guilty of greenwashing.

The only standard criteria that exists to be certified as a sustainable organization or a green business is within individual certification programs. These programs have been developed by numerous government agencies (especially cities and counties), consortiums and nonprofit organizations. Although the criteria varies from program to program, the common values reflected by these programs generally include:

- In compliance with environmental regulations
- Conserves energy and water
- Prevents pollution
- Reduces, reuses and recycles
- Uses renewable energy

What is a carbon footprint?

A carbon footprint is a measurement that reveals how much CO₂ you, your family or your organization are releasing to the atmosphere. Why is this important? Because it is widely believed that too much carbon dioxide (CO₂) released into our atmosphere is the cause of our global warming and climate change problems.

Learning about your carbon footprint is often a turning point for people and organizations who realize they need to be more environmentally responsible. It's difficult not to be affected when you discover that you (individually) are using up the resources of several hundred people on the planet! See www.carbonfootprint.com (or similar online sites) to calculate your carbon footprint and to learn more about responsible carbon management.

If you want to calculate the carbon footprint of your organization, you will need the help of a sustainability professional.

One study estimates that climate change is (already) responsible for 300,000 deaths per year and a total economic cost of \$125 billion per year. Is it time to get serious about climate change?



What is the green industry?

It's hard to read an article or news report these days about green jobs or the green economy without the media referring to the *green industry*.

However, this creates confusion as there are many groups that have been using the *green industry* name for decades. For example:

- Horticulturists often refer to their industry as the *green industry*
- Lawn care professionals often refer to their industry as the *green industry*
- Landscape designers and developers often refer to their industry as the *green industry*

And now, in the context of environmentally-green jobs, people are using the *green industry* name as if to suggest that green jobs are concentrated in a single industry. But that is both inaccurate and misleading because **green jobs can be found in virtually all industries**. Why? Because of the growing number of organizations in all industries that have committed themselves to sustainability and green values.

What is cleantech?

Cleantech is the financing and development of new technologies that provide solutions to our energy and environmental challenges. This is achieved by dramatically reducing the use of natural resources and the output of emissions and wastes. Therefore, cleantech jobs are green jobs.

When people speak of the *cleantech industry*, it is important to realize that cleantech companies, while having much in common, also represent a variety of different industries. For example, here are the top cleantech sectors based on U.S. investment dollars in 2008:

Solar technology	\$3.3 billion
Biofuels (including ethanol, biodiesel, synthetic biology, algae)	\$904 million
Transportation technology (including electric vehicles, advanced batteries, fuel cells)	\$795 million
Wind technology	\$502 million
Smart Grid technology	\$345 million
Agriculture technology	\$166 million
Water technology	\$148 million

Source: *Cleantech Group*

Some experts use the terms cleantech and greentech interchangeably, while some others argue that they are two different fields, or that one is a subset of the other.

The top regions for cleantech in the U.S. include:

- San Francisco Bay Area (including Silicon Valley and Berkeley)
- Austin, Texas
- Pasadena, California
- Boston
- New York
- Seattle
- San Diego
- Houston

A half-dozen leading cleantech companies:

- Det Norske Veritas - www.dnv.com (*big dog* in carbon markets)
- GE Energy - www.gepower.com (*big dog* in wind energy)
- Itron - www.itron.com (*big dog* in smart meters)
- SFC Smart Fuel Cell - www.sfc.com/en/
- Sharp Electronics - <http://solar.sharppusa.com> (*big dog* in solar cell manufacturing)
- Tesla Motors - www.teslamotors.com (manufacturer of the Roadster electric sports car)

What is renewable energy?

Renewable energy includes energy from natural resources that are naturally replenished over a short period of time. This makes renewable energy sustainable, whereas energy from fossil fuels is not sustainable.

In 2008, renewable energy accounted for 9% of our total electricity generation in the United States. This is expected to increase (indefinitely) until we either wean ourselves off of fossil fuels or they become too expensive (or both).

About two-thirds of our renewable energy in 2008 came from traditional hydroelectric sources. However, since 1999, the growth in renewable energy has been coming from other renewable energy sources such as wind and solar power.

Renewable energy does not include energy resources derived from fossil fuels (or their waste products) or waste products from inorganic sources. This includes natural gas and nuclear power.

Renewable energy industries include:

- Biofuel – using living or recently living biological material to produce solid, liquid or gaseous fuel
- Biomass – refers to the wood, waste, and alcohol fuels used to produce energy in the form of methane gas or transportation fuels like ethanol and biodiesel
- Geothermal - using the heat stored in the earth to generate electricity
- Hydroelectricity – using the gravitational force of falling or flowing water to generate electricity
- Solar – using solar radiation to generate electricity
- Tidal - using ocean currents to generate electricity
- Wave - using ocean surface waves to generate electricity
- Wind – using intermittent winds to generate electricity

While all renewable energy industries have an environmental impact, traditional hydroelectric energy sources are controversial as *green energy* because of their large environmental impact. Their importance as clean energy providers that don't require fossil fuels has to be balanced with their negative impact on the environment, including the aquatic ecosystems. For some, that balance is hard to reconcile – even if the dams and reservoirs also provide flood protection. In any case, *small hydro* is the term often used to describe hydroelectric energy sources on a smaller scale that don't require the massive displacement of people, animals and natural resources, or the building of dams and reservoirs, or cause harm to the aquatic ecosystems. Small hydro projects are usually designed to serve small communities or industrial plants.

Where are the green jobs?

- Overview
- Industries where most green jobs are found in the private sector
- Types of nonprofit organizations with green jobs
- Types of public sector/government employers with green jobs

Overview

Thanks to sustainability taking root across the board, green jobs are found in virtually all industries - although not necessarily in large numbers. Some of those green jobs reflect new and emerging occupations, some reflect changing occupations, and some others reflect traditional occupations where the work hasn't changed much in the last decade.

When an organization is genuinely committed to sustainability and green values, it can be argued that *all* their jobs are green jobs; it doesn't matter if it's an environmental scientist or a secretary. Not everyone agrees with this assertion, of course. For example, some do not want to consider the jobs of administrative support staff to be green jobs - ever. But that dividing line is often arbitrary and places too much emphasis on the job titles when job titles are rarely able to tell us about the relationship of the job to the environment. We can probably all agree that the *executive director* of the Sierra Club works in a green job, but that doesn't mean that all *executive directors* work in green jobs.

Other jobs with non-green and non-sustainable employers can be considered green jobs when the nature and purpose of those individual jobs reflect green values. So, is an environmental scientist who works for an employer who happens to be the worst polluter in the state working in a green job? Since we've already ruled out the possibility of the employer being green, the answer is: It depends on the nature and purpose of that individual job. If the job of the environmental scientist was to study and protect the environment, it would be easy to call it a green job - regardless of the employer. But if the job were focused on public relations, it would probably not be considered a green job (by most people's standards). So you likely wouldn't know for sure if it was a green job or not without looking beyond the job title. This is what makes identifying green jobs in the job market so challenging - because how green a job might actually be is rarely revealed in the job's title. In the vast majority of cases, one must look beyond the title to know if the job is green, or not green, or somewhere in between. One should also keep in mind that many jobs have the capability of becoming green jobs - with the right worker, supervisor, manager or CEO.

Industries where most green jobs are found in the private sector

Keep in mind that for many of these industries (those indicated with a qualifier in parentheses), only a part of the industry reflects green jobs or green/sustainable employers. For example, in the publishing industry, only a small number of firms would be considered *sustainable publishers*. Other industries - without a qualifier in parentheses - would be considered all or mostly green.

- Agriculture and food related industries (sustainable/organic)
- Alternative fuel vehicles and related industries
- Alternative fuels
- Bicycle related industries
- Biotech and life sciences (when committed to green values)
- Cleaning and janitorial services (green cleaning)
- Clothing and accessories (organic/recyclable materials)
- Green building, sustainable design, energy efficiency industries
- Ecotourism (tourism focused on environmental protection/preservation and education)
- Environmental services (hazardous materials, groundwater contamination, oil spills)
- Landscaping and habitat restoration services (sustainable landscape design)
- Legal services (green business, environmental/regulatory and land-use law)
- Manufacturing and technology industries (when committed to green values or cleantech)
 - Agriculture technology R&D and manufacturing
 - Biofuel R&D and production (ethanol, biodiesel, synthetic biology, algae)
 - Smart Grid technology R&D and manufacturing
 - Solar technology R&D and manufacturing
 - Transportation technology R&D and manufacturing (electric vehicles, advanced batteries, fuel cells)
 - Wind technology R&D and manufacturing
 - Water technology R&D and manufacturing
- Pesticide services (natural/organic pesticides)
- Printing and publishing industries (when committed to sustainability)
- Public transportation (green/clean)
- Recycling and salvage industries (when committed to sustainability)
- Renewable energy industries (includes biofuel, biomass, geothermal, hydroelectricity, solar energy, tidal power, wave power and wind power)
- Socially responsible investing (SRI) services
- Utilities, electric and water (when committed to sustainability)

Types of nonprofit organizations with green jobs

- Agriculture
- Air Quality
- Climate Change
- Ecosystems
- Energy
- Environmental Disasters
- Environmental Economics
- Environmental Education
- Environmental Ethics
- Environmental Legislation/Policy
- Forests
- Ground Pollution
- Habitat Conservation
- Human Health
- Natural History
- Oceans
- Population
- Sciences
- Sustainable Business
- Sustainable Development
- Sustainable Living
- Transportation
- Urban Issues
- Waste Management
- Water Quality
- Wildlife

Here is one of many online directories of nonprofit organizations:

The EnviroLink Network: www.envirolink.org

There is also an extensive list of green nonprofit organizations in the section of this resource guide entitled Industry and Occupation Specific Resources.

Types of public sector/government employers with green jobs

Federal agencies with green jobs include:

- Army Corps of Engineers
- Bureau of Land Management (BLM)
- Centers for Disease Control and Prevention (CDC)
- Department of Energy
- Environmental Protection Agency
- Fish and Wildlife Service
- Forest Service
- Geological Survey (USGS)
- National Oceanic and Atmospheric Administration (NOAA)
- National Park Service
- Natural Resources Conservation Service (NRCS)

State agencies with green jobs include:

- Agriculture and Food Safety
- Coastal Zone Management
- Community and Economic Development
- Emergency Services
- Energy
- Fisheries and Wildlife Protection
- Parks and Recreation
- Planning
- Pollution Control and Prevention
- Public Health
- Water Resources

Local agencies (e.g. cities, counties and special districts) with green jobs include:

- Air Quality Management
- Conservation/Park Land Management
- Electricity
- Green Building
- Green Business
- Public Transportation
- Recycling
- Regional Planning
- Waste Management
- Water and Wastewater Treatment

How many green jobs are there?

Answer: We don't know for sure, but probably somewhere between 1% and 8% of all of our (current) jobs are green jobs.

Statistical estimates of green jobs, as well as projections of green jobs into the future, are problematic. There are two key reasons for this:

1. The government agencies that collect workforce data don't have much data on green jobs.
2. There has been a general lack of agreement on how to define and count green jobs.

Why don't our state and federal agencies have reliable statistics on green jobs? Mainly due to the fact that their standard occupation and industry classification systems don't address many of the occupations and industries reflected in the new green economy. Government research programs provide data at the occupational level and at the industry level. For example, the data can tell us how many biochemists are employed in your geographic area, but it can't tell us how many of those biochemist jobs are green jobs and how many are not. The data can tell us how many local jobs there are in the publishing industry, but not knowing which publishers are green/sustainable, the data can't tell us how many of those jobs are green jobs and how many are not. Until the classification systems are updated in a significant way, we will lack reliable and comparable data on green jobs.

Due to the problems discussed above, one must rely on ad-hoc government studies and independent studies that have attempted to estimate the number of green jobs. Some of these studies have been very good, while some others have been sorely lacking in credibility and insight. Some have wildly exaggerated the number of green jobs, while some others have grossly underestimated the number of green jobs. What's the difference? The definition of green jobs is at the top of the list, followed closely by differences in research methodology. One should always look at data with a critical eye, and that includes data on green jobs. Consider the economic and political agendas and inherent biases of the people and organizations behind the studies, including the funding sources. Some studies are designed to generate knowledge; others are designed to affect public opinion and/or public policy.

From an assessment of the ad-hoc and independent studies that have been done, it can be estimated that we have somewhere between 770,000 and 12 million green jobs in the U.S. A recent study by the Pew Charitable Trusts estimated the lower number of 770,000 green jobs nationwide, as of the end of 2007. Another recent study by Management Information Services, Inc. and the American Solar Energy Society focused only on the renewable energy and energy efficiency sectors, but nevertheless came away with a much larger estimate of green jobs. Not surprisingly, the two studies use very different research methodologies. Locally, of course, the percentage of green jobs can always be a couple of percentage points higher (or lower) - depending on the local concentration of green jobs and employers. The most comprehensive listing of green jobs/economy studies can perhaps be found on the website of the California Employment Development Department's Labor Market Information Division:

www.labormarketinfo.edd.ca.gov

Under the 'Most Popular Data' menu, select 'Understanding the Green Economy.'

Now look for the 'Digest of Green Reports and Studies' and then start by selecting 'Index to the Digest' which is a regularly updated PDF document that functions as a research bibliography.

What types of occupations can lead to green jobs?

- Overview
- Using O*NET to Research and Explore Occupations
- Career Clusters (pages 15-28)

Overview

Virtually all occupations include both green jobs and non-green jobs. The difference is the number and the ratio of green jobs (to non-green jobs) within each occupation. Choose an occupation in the field of solar energy and you'll be virtually assured that every job you would have in that field would be consistent with the goals of a green career. Choose to become a registered nurse or a social worker, however, and you'll likely have difficulty finding employment that matches your green career interests and values. There are some green jobs out there for registered nurses and social workers, but the odds of getting one are slim. So, depending on your choice of occupations, you might have to be satisfied with being *as green as you can be* in whatever occupation you choose.

The 340 occupations that follow have been identified by my research as having *green career potential*. Nothing is guaranteed of course, but if you have the necessary skills, knowledge and qualifications, and if you live in an area where the industries exist to provide and support the jobs in your chosen field, then your chances of finding employment that supports a green career objective are reasonably assured.

Remember, however, that things change. With a few exceptions, we no longer live in an age where you can expect to work for 20-30 years in the same field or in the same industry. Things change and people have to adapt. Sometimes (they adapt) by updating or acquiring new skills and knowledge; sometimes they adapt by changing careers entirely.

Remember also that, in addition to the 340 occupations on this list, there are several hundred other occupations that reflect jobs that are not green per se, but can offer rewarding opportunities for people with green values. For example, I have yet to include elementary school teachers on my list, but I have been contacted by several such teachers who wanted to let me know that they have turned their jobs into green jobs. To that I say: *Congratulations - job well done! But, sorry, the occupation still doesn't make it on my list.* Why? Because the job that each of them turned into a green job is green because of them and *not* because of the job itself or the employer. That doesn't take anything away from the job or the occupation, or the person who made it green. We need all jobs to be as green as they can be. We don't need all jobs to become *green jobs*.

The 340 occupations are listed by career cluster - an organizational tool that links occupations that are related in terms of their foundational skills. The 16 career clusters were developed by the U.S. Department of Education as a mechanism for revitalizing career and technical education and for showing the potential career pathways within a field of interest. The system is not perfect; for example, there are some occupations that could easily be in multiple career clusters. But, imperfect as the career clustering method is, it remains an effective tool for occupational and career exploration.

Using O*NET to Research and Explore Occupations

The following tables have two columns: the column on the left is the occupational title that makes sense to me from my research. These titles usually include some indication of the industry or sector in which the green jobs are found. The column on the right is the related (or closest match) O*NET occupational title.

Using the U.S. Department of Labor's O*NET OnLine system at <http://online.onetcenter.org>, copy and paste any of these O*NET titles into the Occupation Quick Search window and see if an O*NET Report is available. If so, there is a wealth of information awaiting you. If not, there may still be some information available (such as employment statistics and education requirements). In many cases, however, O*NET has yet to collect the needed information on the occupation. Indeed, some of the occupations have yet to be adequately defined by O*NET.

Whether or not you find an O*NET Report for your occupation, there are many other resources you should consider for researching and exploring the occupations that interest you most. One is my new publication (with co-author Alice Rush) entitled *Green Careers: Choosing Work for a Sustainable Future*, published by New Society Publishers. This 360-page paperback book (available from all major booksellers) is largely devoted to profiling 90 different career fields which reflect the wide variety of green career choices now available. The profiles include interviews with nearly 70 professionals who work in those green careers, including green entrepreneurs. That combination of occupational information and real-people information makes it a unique resource for exploring green careers.

Career Cluster #1: Agriculture, Food and Natural Resources

OCCUPATION	RELATED O*NET TITLE
Agricultural Equipment Operators (sustainable/organic)	Agricultural Equipment Operators
Agricultural Inspectors	Agricultural Inspectors
Agricultural Technicians (sustainable/organic)	Agricultural Technicians
Alternative Fuel Production Technicians (ethanol and biodiesel)	Biofuels Processing Technicians
Aquacultural and Fisheries Managers (green/sustainable organization or products)	Aquacultural Managers
Aquacultural and Fisheries Workers (green/sustainable organization or products)	Farmworkers, Farm and Ranch Animals
Arborists, Certified	Tree Trimmers and Pruners
Biomass Boiler Operators	Biomass Plant Technicians
Biomass Plant Technicians	Biomass Plant Technicians
Building Controls Systems Specialists, including Technicians and Operating Engineers	Stationary Engineers and Boiler Operators
Cogeneration Technicians	Power Plant Operators
Conservation Scientists	Conservation Scientists
Environmental Engineering and Pollution Control Technicians	Environmental Engineering Technicians
Environmental Engineers, including Ecological and Air Quality Engineers	Environmental Engineers
Farm Community Supported Agriculture (CSA) Program Managers (sustainable/organic)	Farmers and Ranchers

Farm Managers (sustainable/organic)	Farm, Ranch, and Other Agricultural Managers
Farmers and Ranchers (sustainable/organic)	Farmers and Ranchers
Farmworker Supervisors (sustainable/organic)	First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers
Farmworkers (sustainable/organic)	Farmworkers and Laborers, Crop
Food Product Inspectors	Agricultural Inspectors
Forest and Conservation Technicians	Forest and Conservation Technicians
Forest and Conservation Workers	Forest and Conservation Workers
Foresters, including Environmental Protection Foresters, Forest Pathologists and Land Stewards	Foresters
Gas Plant Operators (natural gas)	Gas Plant Operators
Geothermal Field Technicians	Geothermal Technicians
Geothermal Technicians	Geothermal Technicians
Greenskeeping Supervisors (eco-friendly groundskeeping)	First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers
Hydroelectric Plant Operators	Power Plant Operators
Hydrogen Power Plant Operators	Power Plant Operators
Landscape Installation Supervisors (green/sustainable)	First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers
Landscaping and Groundskeeping Workers (green/sustainable)	Landscaping and Groundskeeping Workers
Methane Gas Collection System Operators	Methane/Landfill Gas Collection System Operators
Methane Gas Generation System Technicians	Methane/Landfill Gas Generation System Technicians
Natural Gas Exploration Technicians (green/sustainable)	Geological Sample Test Technicians
Natural Gas Field Technicians	Service Unit Operators, Oil, Gas, and Mining
Nursery and Greenhouse Managers (sustainable/native plants)	Nursery and Greenhouse Managers
Nursery and Greenhouse Workers (sustainable/native plants)	Nursery Workers
Park Naturalists/Rangers and Historical, Cultural and Natural Resources Interpreters	Park Naturalists
Pesticide Technicians (natural/organic pesticides)	Pest Control Workers
Power Distributors, including Electrical Energy Storage/Distribution Technicians (green/sustainable)	Power Distributors and Dispatchers
Power Plant Instrument/Control Technicians and Process Operators (green/sustainable)	Power Plant Operators
Power Plant Operators (green/sustainable)	Power Plant Operators
Purchasing Agents and Buyers (sustainable/organic farm products)	Purchasing Agents and Buyers, Farm Products
Range Managers, Natural Resource Officers and Range Conservationists/Ecologists	Range Managers
Soil and Plant Scientists, including Agronomists	Soil and Plant Scientists
Soil and Water Conservationists, including Conservation Officers, Ecologists and Erosion Specialists	Soil and Water Conservationists
Water Treatment Plant Operators	Water and Liquid Waste Treatment Plant and System Operators
Zoologists and Wildlife Biologists, including Marine Biologists (green/sustainable)	Zoologists and Wildlife Biologists

Career Cluster #2: Architecture and Construction

OCCUPATION	RELATED O*NET TITLE
Architects, Sustainable Design and Natural Building	Architects, Except Landscape and Naval
Architectural Drafters and CAD Technicians	Architectural Drafters
Building Performance and Retrofitting Specialists (contractors)	Construction Managers
Civil Drafters and CAD Technicians	Civil Drafters
Civil Engineering Technicians	Civil Engineering Technicians
Construction and Building Inspectors, including Green Building Inspectors	Construction and Building Inspectors
Deconstruction Specialists and Project Managers (green building)	Construction Managers
Electrical Drafters and CAD Technicians (cleantech)	Electrical Drafters
Electronic Drafters and CAD Technicians (cleantech)	Electronic Drafters
Geothermal Heating, Ventilation and Air Conditioning (HVAC) Service Technicians and Installers	Heating and Air Conditioning Mechanics and Installers
Geothermal Power Plant Sheet Metal Workers	Sheet Metal Workers
Green Building Carpenters	Carpenters
Green Building Cement Masons	Cement Masons and Concrete Finishers
Green Building Construction Managers and Project Managers	Construction Managers
Green Building Cost Estimators	Cost Estimators
Green Building Deconstruction Workers	Construction Laborers
Green Building Electricians	Electricians
Green Building Iron and Steel Workers	Structural Iron and Steel Workers
Green Building Plumbers	Plumbers
Green Building Roofers	Roofers
Green Building Trades Worker Supervisors, First-Line	First-Line Supervisors/Managers of Construction Trades and Extraction Workers
Heating, Ventilation and Air Conditioning (HVAC) Service Technicians and Installers	Heating and Air Conditioning Mechanics and Installers
Hydroelectric Plant Electricians	Electricians
Insulation Worker Supervisors	First-Line Supervisors/Managers of Construction Trades and Extraction Workers
Insulation Workers, Floor, Ceiling, and Wall	Insulation Workers, Floor, Ceiling, and Wall
Insulation Workers, Mechanical	Insulation Workers, Mechanical
Landscape Architects (sustainable design and habitat restoration)	Landscape Architects
Landscape Contractors (green/sustainable)	Construction Managers
LEED Project Managers and Other Green Building Certification Specialists	Construction Managers
Lineworkers (green electric utility)	Electrical Power-Line Installers and Repairers
Mechanical Drafters and CAD Technicians (cleantech)	Mechanical Drafters
Methane Gas Capturing System Installers	Installation, Maintenance, and Repair Workers, All Other
Operating Engineers and Other Construction Equipment Operators (green building)	Operating Engineers and Other Construction Equipment Operators
Sheet Metal Workers (green/sustainable organization or products)	Sheet Metal Workers

Solar Energy Systems Installer Helpers	Helpers--Installation, Maintenance, and Repair Workers
Solar Photovoltaic Energy Systems Installation Supervisors and Project Managers	Solar Energy Installation Managers
Solar Photovoltaic Energy Systems Service Technicians	Solar Photovoltaic Installers
Solar Photovoltaic Energy Systems Technicians and Installers	Solar Photovoltaic Installers
Solar Thermal Energy Systems Installation Supervisors and Project Managers	Solar Energy Installation Managers
Solar Thermal Energy Systems Service Technicians	Solar Photovoltaic Installers
Solar Thermal Energy Systems Technicians and Installers	Solar Thermal Installers and Technicians
Weatherization Installers and Technicians (green building/utilities)	Weatherization Installers and Technicians
Wind Energy Technicians and Installers	Wind Turbine Service Technicians
Wind Turbine Service Technicians	Wind Turbine Service Technicians
Wind Turbine Sheet Metal Workers	Sheet Metal Workers

Career Cluster #3: Arts, A/V Technology and Communication

OCCUPATION	RELATED O*NET TITLE
Alternative Fuel Vehicle Designers and Engineers	Commercial and Industrial Designers
Bicycle Designers	Commercial and Industrial Designers
Commercial and Industrial Designers (green/sustainable organization or products)	Commercial and Industrial Designers
Desktop Publishers (green/sustainable organization)	Desktop Publishers
Fashion Designers (green/sustainable organization or products)	Fashion Designers
Interior Designers (green/sustainable design)	Interior Designers
Journalists and Reporters (green/environmental)	Reporters and Correspondents
Prepress Technicians (sustainable printing/publishing)	Prepress Technicians and Workers
Public Relations (PR) Specialists (green/sustainable organization or products)	Public Relations Specialists
Textile Designers (organic/recyclable materials)	Commercial and Industrial Designers
Writers and Authors (green/environmental/sustainable)	Writers and Authors

Career Cluster #4: Business Management and Administration

OCCUPATION	RELATED O*NET TITLE
Accountants, including Sustainability and Environmental Accountants	Accountants
Administrative Services Managers, including Administrators and Facilities Managers	Administrative Services Managers
Auditors (green/sustainable organization or products)	Auditors
Bicycle Messengers and Cargo Carriers	Couriers and Messengers
Biomass Plant Managers	General and Operations Managers
Biomass Production Managers	Biomass Production Managers
Brownfield Redevelopment Specialists	Brownfield Redevelopment Specialists and Site Managers
Business Owners/Managers (green/sustainable organization)	Chief Executives
Carbon Footprint Specialists and Consultants	Energy Auditors
Compliance Managers	Compliance Managers
Customer Service Representatives (green/sustainable organization or products)	Customer Service Representatives
Energy Auditors	Energy Auditors
Energy Efficiency and Resource Conservation Managers	Energy Auditors
Energy Raters, Commercial/Industrial	Energy Auditors
Energy Raters, Home	Energy Auditors
General and Operations Managers (green/sustainable organization)	General and Operations Managers
Geothermal Plant Managers	General and Operations Managers
Greenhouse Gas Emissions Permitting Consultants	Energy Auditors
Greenhouse Gas Emissions Report Verifiers	Energy Auditors
Human Resources (HR) Managers (green/sustainable organization)	Human Resources Managers
Hydroelectric Plant Site Managers	Managers, All Other
Hydroelectric Power Plant Managers	General and Operations Managers
Hydrogen Power Plant Managers	General and Operations Managers
Janitors and Cleaners (green cleaning)	Janitors and Cleaners, Except Maids and Housekeeping Cleaners
Legal Secretaries (green business, environmental regulatory and land use law)	Legal Secretaries
Management Analysts (green/sustainable organization)	Management Analysts
Print Center Specialists (sustainable printing)	Office Machine Operators, Except Computer
Print Production Managers (sustainable printing/publishing)	General and Operations Managers
Public Relations (PR) Managers (green/sustainable organization or products)	Public Relations Managers
Receptionists (green/sustainable organization or products)	Receptionists and Information Clerks
Regulatory Affairs Managers	Regulatory Affairs Managers
Regulatory Affairs Specialists	Regulatory Affairs Specialists
Risk Management Specialists (green/sustainable organization or products)	Risk Management Specialists
Secretaries (green/sustainable organization)	Secretaries, Except Legal, Medical, and Executive

Shipping and Receiving Clerks (green/sustainable organization or products)	Shipping, Receiving, and Traffic Clerks
Solar Power Plant Managers	General and Operations Managers
Sustainability Coordinators, Officers, Specialists and Consultants	Sustainability Specialists
Sustainability Officers, Chief	Chief Sustainability Officers
Wind Energy Project Managers	Wind Energy Project Managers
Wind Farm Operations Managers	Wind Energy Operations Managers

Career Cluster #5: Education and Training

OCCUPATION	RELATED O*NET TITLE
Agricultural Sciences Professors (sustainable/organic)	Agricultural Sciences Teachers, Postsecondary
Architecture Professors (sustainable design and natural building)	Architecture Teachers, Postsecondary
Biological Science Professors (green/sustainable)	Biological Science Teachers, Postsecondary
Chemistry and Forensic Toxicology Professors (green/sustainable)	Chemistry Teachers, Postsecondary
Earth Sciences Professors (green/sustainable)	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary
Environmental Educators	Teachers and Instructors, All Other
Environmental Engineering Professors (green/sustainable)	Engineering Teachers, Postsecondary
Environmental Science Professors (green/sustainable)	Environmental Science Teachers, Postsecondary
Farm Management Advisors and Consultants (sustainable/organic)	Farm and Home Management Advisors
Green Business/Sustainability Professors (green/sustainable)	Business Teachers, Postsecondary
Law Professors (green business, environmental regulatory and land use law)	Law Teachers, Postsecondary
Physical Geography Professors (green/sustainable)	Geography Teachers, Postsecondary

Career Cluster #6: Finance

OCCUPATION	RELATED O*NET TITLE
Bookkeepers and Accounting Technicians (green/sustainable organization)	Bookkeeping, Accounting, and Auditing Clerks
Carbon Traders	Sales Agents, Securities and Commodities
Financial Analysts, including Sustainable Investment Analysts and Renewable Energy Specialists	Financial Analysts
Financial Managers (green/sustainable organization or products)	Financial Managers, Branch or Department
Market Research Analysts (green/sustainable organization or products)	Market Research Analysts
Renewable Energy Brokers and Traders	Energy Brokers
Socially Responsible Investing (SRI) Investment Fund Managers and Advisors	Sales Agents, Securities and Commodities
Treasurers and Controllers (green/sustainable organization)	Treasurers and Controllers

Career Cluster #7: Government and Public Administration

OCCUPATION	RELATED O*NET TITLE
Environmental, Health and Regulatory Compliance Specialists/Inspectors	Environmental Compliance Inspectors
Transportation Planners	Urban and Regional Planners
Urban and Regional Planners	Urban and Regional Planners

Career Cluster #8: Health Science

OCCUPATION	RELATED O*NET TITLE
Environmental Health and Safety Specialists, Analysts and Managers	Occupational Health and Safety Specialists
Environmental Health and Safety Technicians, including Occupational Safety and Health Inspectors	Occupational Health and Safety Technicians
Ergonomists	Occupational Health and Safety Specialists
Industrial Hygienists (green/sustainable organization or products)	Occupational Health and Safety Specialists
Industrial Waste Inspectors	Occupational Health and Safety Technicians
Public Health Inspectors and Officers	Occupational Health and Safety Specialists
Water Inspectors	Occupational Health and Safety Technicians

Career Cluster #9: Hospitality and Tourism

OCCUPATION	RELATED O*NET TITLE
Bakers and Pastry Chefs (green/organic food places)	Bakers
Bussers and Dishwashers (green/organic food places)	Dining Room and Cafeteria Attendants and Bartender Helpers
Chefs (green/organic food places)	Chefs and Head Cooks
Cooks (green/organic food places)	Cooks, Restaurant
Ecotour Guides and Environmental Educators	Tour Guides and Escorts
Ecotour Operators	Travel Guides
Food Prep and Serving Workers, Combined (green/organic food places)	Combined Food Preparation and Serving Workers, Including Fast Food
Food Prep Workers (green/organic food places)	Food Preparation Workers
Food Service Managers (green/organic food places)	Food Service Managers
Maids and Housekeepers (green cleaning)	Maids and Housekeeping Cleaners
Meeting and Convention Planners (green events or green/sustainable organization)	Meeting and Convention Planners
Servers (green/organic food places)	Waiters and Waitresses

Career Cluster #10: Human Services

None

Career Cluster #11: Information Technology

OCCUPATION	RELATED O*NET TITLE
Computer Programmers (green/sustainable organization or products)	Computer Programmers
Computer Software Engineers (green/sustainable organization or products)	Computer Software Engineers, Applications
Computer Support Specialists (green/sustainable organization or products)	Computer Support Specialists
Database Administrators (green/sustainable organization or products)	Database Administrators
Information Technology (IT) Managers (green/sustainable organization)	Computer and Information Systems Managers
Network and Computer Systems Administrators (green/sustainable organization)	Network and Computer Systems Administrators
Network Systems and Data Communications Analysts (green/sustainable organization)	Network Systems and Data Communications Analysts
Software Quality Assurance Engineers and Testers (green/sustainable organization or products)	Software Quality Assurance Engineers and Testers

Career Cluster #12: Law, Public Safety, Corrections and Security

OCCUPATION	RELATED O*NET TITLE
Fish and Game Wardens, Wildlife Officers/Managers and Park Managers/Wardens	Fish and Game Wardens
Lawyers (green business, environmental regulatory and land use law)	Lawyers
Paralegals and Legal Assistants (green business, environmental regulatory and land use law)	Paralegals and Legal Assistants

Career Cluster #13: Manufacturing

OCCUPATION	RELATED O*NET TITLE
Alternative Fuel Vehicle Service Technician Supervisors	First-Line Supervisors/Managers of Mechanics, Installers, and Repairers
Bicycle Assemblers	Assemblers and Fabricators, All Other
Bindery Workers (sustainable printing/publishing)	Bindery Workers
Boilermakers (green/sustainable organization)	Boilermakers
Chemical Engineering Technicians (green/sustainable organization or products)	Engineering Technicians, Except Drafters, All Other
Chemical Equipment Operators (green/sustainable organization or products)	Chemical Equipment Operators and Tenders
Chemical Plant Operators (green/sustainable organization or products)	Chemical Plant and System Operators
CNC (Computer Numerical Control) Programmers (cleantech)	Computer-Controlled Machine Tool Operators, Metal and Plastic
Electrical and Electronic Equipment Assemblers (cleantech)	Electrical and Electronic Equipment Assemblers
Electrical and Electronics Repairers, Commercial and Industrial Equipment (cleantech)	Electrical and Electronics Repairers, Commercial and Industrial Equipment
Electrical Engineering Technicians (green/sustainable organization or products)	Electrical Engineering Technicians

Electronics Engineering Technicians (green/sustainable organization or products)	Electronics Engineering Technicians
Engine and Machine Assemblers (cleantech)	Engine and Other Machine Assemblers
Ethanol Maintenance Mechanics	Maintenance and Repair Workers, General
Geothermal Heat Pump Machinists	Machinists
Heating, Ventilation, Air Conditioning and Refrigeration (HVACR) Service Technicians and Installers	Refrigeration Mechanics and Installers
Hydroelectric Component Machinists	Machinists
Hydroelectric Machinery Mechanic	Industrial Machinery Mechanics
Hydroelectric Operations Maintenance Workers	Maintenance and Repair Workers, General
Hydroelectric Plant Operation and Maintenance Technicians	Hydroelectric Plant Technicians
Industrial Engineering Technicians (green/sustainable organization or products)	Industrial Engineering Technicians
Industrial Machinery Mechanics (cleantech)	Industrial Machinery Mechanics
Industrial Production Managers (cleantech)	Industrial Production Managers
Job Printers (sustainable/green)	Job Printers
Machinists (cleantech)	Machinists
Maintenance and Repair Workers (green/sustainable organization or green building)	Maintenance and Repair Workers, General
Maintenance Workers, Machinery (cleantech)	Maintenance Workers, Machinery
Mechanical Engineering Technicians (cleantech)	Mechanical Engineering Technicians
Methane Gas Capturing System Installation Project Managers	First-Line Supervisors/Managers of Mechanics, Installers, and Repairers
Methane Gas Capturing System Maintenance Workers	Maintenance and Repair Workers, General
Millwrights (cleantech)	Millwrights
Nanotechnology Engineering Technicians (cleantech)	Nanotechnology Engineering Technicians
Power Plant Operator Supervisors (green/sustainable)	First-Line Supervisors/Managers of Production and Operating Workers
Print Shop Supervisors (sustainable printing/publishing)	First-Line Supervisors/Managers of Production and Operating Workers
Printer Helpers (sustainable printing/publishing)	Helpers--Production Workers
Printing Press Operators (sustainable printing/publishing)	Printing Machine Operators
Purchasing Agents (green/sustainable organization)	Purchasing Agents, Except Wholesale, Retail, and Farm Products
Recyclable Material Collectors, including Recycling Technicians	Refuse and Recyclable Material Collectors
Recyclable Materials Sorters and Processors	Recycling and Reclamation Workers
Solar Photovoltaic Energy Research and Development Lab Technicians	Engineering Technicians, Except Drafters, All Other
Solar Photovoltaic Fabrication Technicians	Assemblers and Fabricators, All Other
Solar Photovoltaic Film Installers	Grinding and Polishing Workers, Hand
Solar Thermal Energy Research and Development Lab Technicians	Engineering Technicians, Except Drafters, All Other
Solar Thermal Fabrication Technicians	Assemblers and Fabricators, All Other
Structural Metal Fabricators and Fitters (cleantech)	Structural Metal Fabricators and Fitters
Team and Production Assemblers (cleantech)	Team Assemblers
Textile Hand Sewers (organic/recyclable materials)	Textile Hand Sewers

Textile Machine Operators (organic/recyclable materials)	Textile, Apparel, and Furnishings Workers, All Other
Textile Sewing Machine Operators (organic/recyclable materials)	Textile Sewing Machine Operators
Textile Workers (organic/recyclable materials)	Textile, Apparel, and Furnishings Workers, All Other
Welders, Cutters, Solderers, and Brazers (cleantech)	Welders, Cutters, Solderers, and Brazers
Wind Turbine Machinists	Machinists

Career Cluster #14: Marketing, Sales and Service

OCCUPATION	RELATED O*NET TITLE
Advertising and Promotions Managers (green/sustainable products or services)	Advertising and Promotions Managers
Alternative Fuel Vehicle Salespersons	Retail Salespersons
Alternative Fuels Service Station Attendants	Service Station Attendants
Bicycle and Accessories Salespersons	Retail Salespersons
Buyers (sustainable/green products)	Wholesale and Retail Buyers, Except Farm Products
Geothermal Sales Representatives	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
Green Building Materials Distributors and Sales Representatives	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
Green Building Materials Retail Sales Clerks and Product Specialists	Stock Clerks, Sales Floor
Heating, Ventilation and Air Conditioning (HVAC) Sales Engineers	Sales Engineers
Heating, Ventilation and Air Conditioning (HVAC) Sales Representatives	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
Marketing Managers (green/sustainable products or services)	Marketing Managers
Purchasing Managers (green/sustainable organization)	Purchasing Managers
Sales Representatives, Natural/Organic Products	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
Sales Supervisors and Managers (green/sustainable products or services)	Sales Managers
Solar Photovoltaic Energy Systems Sales Engineers	Sales Engineers
Solar Photovoltaic Energy Systems Sales Representatives	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
Solar Thermal Energy Systems Sales Engineers	Sales Engineers
Solar Thermal Energy Systems Sales Representatives	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products

Career Cluster #15: Science, Technology, Engineering and Mathematics

OCCUPATION	RELATED O*NET TITLE
Agricultural Engineers, including Conservation and Biological Engineers (sustainable/organic)	Agricultural Engineers
Atmospheric and Space Scientists, including Climatologists, Meteorologists and Air Analysts	Atmospheric and Space Scientists
Biochemists and Biophysicists, including Toxicologists and Ecotoxicologists	Biochemists and Biophysicists
Biological Technicians, including Environmental and Wildlife Technicians	Biological Technicians
Biomass Engineers	Electrical Engineers
Chemical Engineers, including Green Chemical Engineers (green/sustainable organization or products)	Chemical Engineers
Chemical Technicians, including Environmental/Green Chemical Techs (green/sustainable)	Chemical Technicians
Chemists and Forensic Toxicologists (green/sustainable)	Chemists
Civil Engineers, Green Building	Civil Engineers
Compliance Analysts, including Energy Regulation Specialists	Environmental Scientists and Specialists, Including Health
Electrical Engineers (green/sustainable organization or products)	Electrical Engineers
Energy Engineers	Energy Engineers
Engineering Managers and Directors, including Chief Engineers (green/sustainable)	Engineering Managers
Environmental Health and Safety Engineers	Industrial Safety and Health Engineers
Environmental Science Technicians, Lab Techs, and Air Pollution Auditors/Technicians	Environmental Science and Protection Technicians, Including Health
Environmental Scientists, including Researchers, Analysts and Environmental Protection Inspectors	Environmental Scientists and Specialists, Including Health
Epidemiologists, including Environmental Epidemiologists	Epidemiologists
Geographers (green/sustainable organization or products)	Geographers
Geographic Information Systems (GIS) Specialists (green/sustainable organization or products)	Cartographers and Photogrammetrists
Geoscientists, Environmental Geologists, Hydrogeologists, and Marine Geologists (green/sustainable)	Geoscientists, Except Hydrologists and Geographers
Geothermal Mechanical Engineers	Mechanical Engineers
Geothermal Operations Engineers	Energy Engineers
Geothermal Power Generation Electrical Engineers	Electrical Engineers
Geothermal Power Generation Mechanical Engineers	Mechanical Engineers
Green Building Materials Designers	Materials Engineers
Hazardous Materials (HazMat) and Asbestos Abatement Workers	Hazardous Materials Removal Workers
Health and Safety Engineers (green/sustainable organization or products)	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors
Hydroelectric Hydrogeologists	Geoscientists, Except Hydrologists and Geographers
Hydroelectric Plant Electrical Engineers	Electrical Engineers

Hydroelectric Plant Mechanical Engineers	Mechanical Engineers
Hydroelectric Plant Power Generation Engineers	Energy Engineers
Hydroelectric Plant Structural Engineers	Civil Engineers
Hydrogen Power Plant Engineers	Energy Engineers
Hydrologists, Environmental Hydrologists and Water Resources Managers (green/sustainable)	Hydrologists
Industrial Engineers (green/sustainable organization or products)	Industrial Engineers
Irrigation and Reservoir Engineers (green/sustainable)	Civil Engineers
Materials Engineers (cleantech)	Materials Engineers
Materials Scientists (cleantech)	Materials Scientists
Mechanical Engineers (cleantech)	Mechanical Engineers
Methane Gas Capturing System Engineers	Energy Engineers
Microbiologists, including Environmental/Public Health Microbiologists	Microbiologists
Nanosystems Engineers (cleantech)	Engineers, All Other
Nanotechnology Engineering Technologists (cleantech)	Nanotechnology Engineering Technologists
Natural Sciences Managers (green/sustainable)	Natural Sciences Managers
Physicists, including Health and Atmospheric Physicists (green/sustainable)	Physicists
Solar Photovoltaic Energy Research and Development Engineers	Energy Engineers
Solar Photovoltaic Energy Systems Designers/Engineers	Solar Energy Systems Engineers
Solar Thermal Energy Research and Development Engineers	Energy Engineers
Solar Thermal Energy Systems Designers/Engineers	Solar Energy Systems Engineers
Urban and Regional Planning Aides/Technicians	City and Regional Planning Aides
Waste Management Engineers (green/sustainable)	Civil Engineers
Wind Farm Electrical Systems Designers	Electrical Engineers
Wind Turbine Electrical Engineers	Electrical Engineers
Wind Turbine Engineers	Wind Energy Engineers
Wind Turbine Mechanical Engineers	Mechanical Engineers

Career Cluster #16: Transportation, Distribution and Logistics

OCCUPATION	RELATED O*NET TITLE
Alternative Fuel Vehicle Service Technicians	Automotive Master Mechanics
Bicycle Service Technicians	Bicycle Repairers
Dispatchers, Non-emergency (green/sustainable organization or products)	Dispatchers, Except Police, Fire, and Ambulance
Farm Equipment Mechanics (sustainable/organic)	Farm Equipment Mechanics
Forklift Operators (green/sustainable organization or products)	Industrial Truck and Tractor Operators
Fuel Storage Technicians (green/sustainable organization or products)	Production Workers, All Other
Green Building Materials Yard/Warehouse Supervisors	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators
Laborers, Stock Clerks and Material Movers (green/sustainable organization or products)	Laborers and Freight, Stock, and Material Movers, Hand
Public Transit Bus and Rail Engine Mechanics	Bus and Truck Mechanics and Diesel Engine Specialists
Public Transit Bus Driver Supervisors (green buses)	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators
Public Transit Bus Drivers (green buses)	Bus Drivers, Transit and Intercity
Public Transit Dispatchers (green transit)	Dispatchers, Except Police, Fire, and Ambulance
Public Transit Inspectors	Transportation Inspectors
Public Transit Subway Operators, including Light Rail Vehicle Operators	Subway and Streetcar Operators
Schedulers, Planners and Expeditors (green/sustainable organization or products)	Production, Planning, and Expediting Clerks
Smog Technicians	Transportation Vehicle, Equipment and Systems Inspectors, Except Aviation
Storage and Distribution Managers (green/sustainable organization or products)	Storage and Distribution Managers
Transportation Managers, including Public Transit (green/sustainable organization)	Transportation Managers

Best online resources for green career exploration?

- U.S. Department of Labor
- State Labor Market Information Divisions
- Other sources
- Career assessment tests

One cannot choose what one does not know, and many occupations are unknown to most of us. One may stumble into an appropriate occupation by sheer luck, but the wise choice of an occupation requires information about what occupations are available, what they require, and what they offer.

-Robert Hoppock, 1902-1995

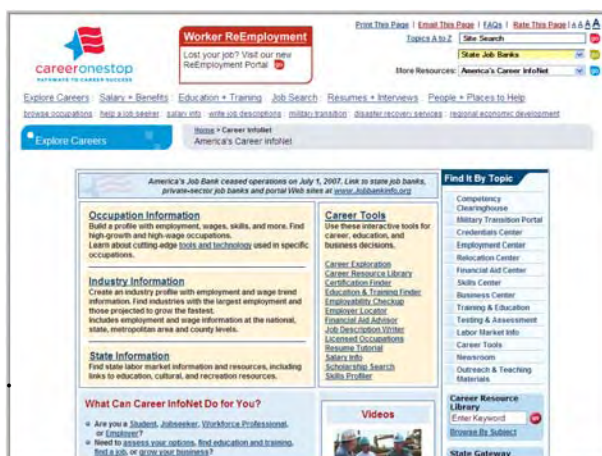
U.S. Department of Labor

The U.S. Department of Labor (DOL) is the primary federal agency responsible for providing the nation with occupational and labor market information. Each of the four resources listed below has its strengths and weaknesses, but all include occupational descriptions, wages and education/skill requirements. I would recommend beginning with O*NET.

O*NET OnLine

<http://online.onetcenter.org>

This website is the most comprehensive resource available in terms of describing occupations and their knowledge, skill and ability requirements. Full reports available for about 900 different occupations.



America's Career InfoNet

www.careerinfonet.org

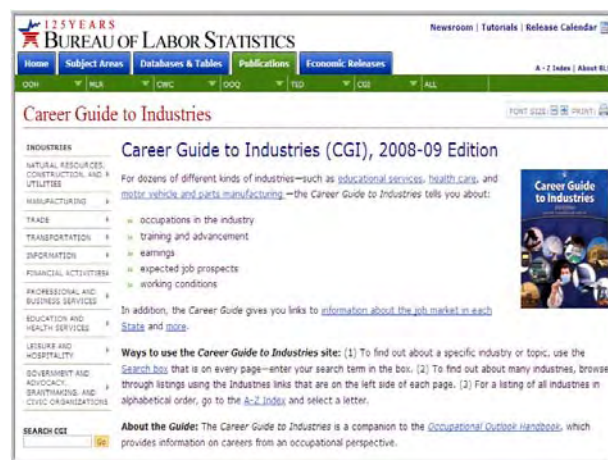
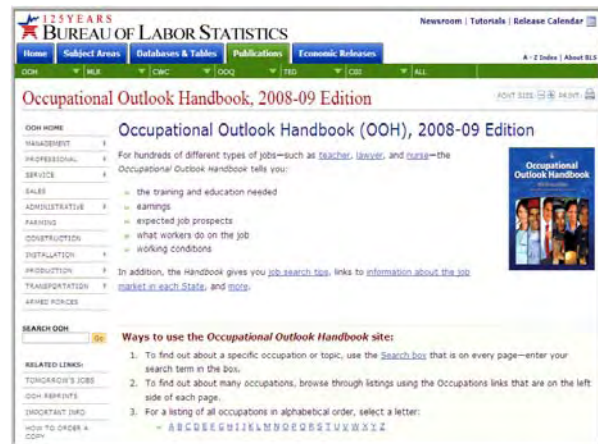
This user-friendly website uses a large number of DOL data sources and allows you to create customized occupational profiles for about 750 different occupations.

Occupational Outlook Handbook

(book or online edition=same content)

www.bls.gov/oco/

The OOH is the most popular occupational reference publication in careers centers and libraries across the nation. It provides very readable and descriptive information for about 300 different occupations.



Career Guide to Industries

(book or online edition)

<http://stats.bls.gov/oco/cg/home.htm>

This resource is very similar in content to the Occupational Outlook Handbook, except that it profiles about 45 different industries and then describes the occupations within those industries.

State Labor Market Information Divisions

Each state has an employment or labor agency with its own Labor Market Information Division. Like the Department of Labor at the federal level, LMID agencies/departments have primary responsibility for providing occupational and labor market information for their individual states. Available information may vary a bit from state to state, but they generally provide a wide range of useful information, including lists of employers by industry and geographic area.

Use this website to locate the LMID in your state: www.bls.gov/oco/oco20024.htm

In California, go to: www.labormarketinfo.edd.ca.gov/

Other Sources

Check:

- Libraries, career centers, and career counselors
- New books on green/environmental careers (especially this author's new book!)
- Green niche and green industry and occupation-specific resources (in this resource guide)

Do:

- Informational interviews!

Career assessment tests

There are various types of career assessment tests. Some are free; some are not. Some are done online; some are done with a paper and pencil. Some are administered by career counselors; some are self-directed. The one thing they all have in common is that they each work well for some people; for others they would seem to be a waste of time. Whether or not a career assessment test would be worthwhile for you might have more to do with your attitude than with the test itself. If you are ready to take a fresh look at yourself and at your career choices, you might find a career assessment test to be just what you need to help you find *your* path.

There are two career assessment tests that I can easily recommend: one is a *career interest assessment*, and the other is a *skills assessment*. Both are free and available online. Neither will collect or use your personal information.

CareerZone Interest Assessment

www.cacareerzone.org or
www.nycareerzone.org

Occupations are rated in terms of six interest areas known as the RIASEC interest areas (based largely on the work of Dr. John L. Holland, 1919-2008). The ratings allow for a wide variety of combinations across the spectrum of occupations. This assessment test helps you quickly identify your pattern based on your three highest rated interest areas. Your pattern then matches up with the patterns of a certain number of occupations (which may range from 10-100 matching occupations). It is then up to you to explore any or all of those occupations to see which ones suit you best.



iSeek Skills Assessment

www.iseek.org

If you have developed a skill set from your current or previous employment, you might want to assess the skills you most enjoy using as a tool for exploring your career choices. Use iSeek to assess your skills and then explore any or all of your matching occupations to see which ones suit you best.

Best online resources for green job hunting?

- Overview
- General purpose employment websites
- State job banks
- Local/regional employment websites
- Local/regional newspaper online classified ads
- Niche employment websites serving specific industries or professions
- Employer websites
- Job search engines
- Networking websites
- Offline networking

Overview

Online resources for green job hunting include:

- General purpose employment websites (aka job boards)
- State job banks
- Local/regional employment websites
- Local/regional newspaper online classified ads
- Niche employment websites serving specific industries or professions
- Employer websites
- Job search engines
- Networking websites

Employment websites known as *job boards* usually offer these features to job seekers:

1. The ability to post resumes for employers to find
2. The ability to search current job postings
3. News and information to help you with your job search

Employment websites are typically free to job seekers, whereas employers pay to post their jobs and to use their services. However, there are exceptions. For example, some sites will charge job seekers for bulk resume postings and for other premium services. There are also some excellent membership-based sites that offer a range of career or professional association services which also include a job board. So employment websites are usually, but not always, free to job seekers.

Note: Beware of employment websites/job boards that don't disclose a) who owns the site and b) their privacy policies. The decision is up to you, but in the opinion of this author, such sites are not to be trusted with your personal information.

According to a recent employment website survey with more than 1,500 job seekers, when asked "In general, which sites are most helpful?" - the responses were:

- 37% said niche sites that specialize by career field or industry
- 36% said general purpose job boards
- 11% said search engines for jobs
- 7% said niche sites that specialize by geography
- 5% said job boards at employers' sites
- 4% said association sites with job boards

General purpose employment websites

These three sites are consistently ranked at the top of most *Best Employment Websites/Job Board* lists. Each one serves as a repository for huge numbers of jobs (including green jobs) posted by employers and recruiters.

- Monster.com - www.monster.com
- Yahoo! HotJobs - <http://hotjobs.yahoo.com>
- CareerBuilder - www.careerbuilder.com

You should explore and become familiar with each one of these sites, plus other good ones that you may have heard about. But don't feel obligated to use all three at the same time. Experts suggest using several sites in your job search in order to maximize your exposure to relevant jobs, but the right number depends on you. Some people get overwhelmed using two sites; others are able to balance using a dozen different sites. When you consider all the different types of employment websites available, you have many to choose from. Using one or two general purpose employment websites may suffice.

State job banks

The first employment website to reach one million job listings (at one time) was America's Job Bank. However, that site was closed in 2007 by its sponsor (the U.S. Dept. of Labor) because of "duplication of services" (i.e. the growth of the private employment website industry). Nevertheless, each state continues to operate its version of America's Job Bank. See www.jobbankinfo.org to find the job bank for your state.

Local/regional employment websites

Craigslist at www.craigslist.org is the *big dog* in terms of local/regional employment websites. There are about 450 local Craigslist websites to choose from. If you put them all together into one site, it would have more job ads than any other employment website. In addition to Craigslist, check with a local career center to see what other employment websites may exist in your area. You can always use America's Service Locator at www.servicelocator.org/onestopcenters.asp to find your local one-stop career center. While there, check to see what kinds of free services they can provide you, including seminars on career planning and job hunting. They should also have a good library of job/career resources, as well as public computer/internet access (for job seekers).

Local/regional newspaper online classified ads

Even though these are not good times for newspapers, some employers still do things the old fashioned way: When they have a job opening, they post an ad in their local newspaper (or perhaps in their favorite trade journal). In most cases, those ads are also extended to the online edition of the newspaper or journal, but not always. Also, in some cases, the newspaper may partner with CareerBuilder to handle the online job listings.

Niche employment websites serving specific industries or professions

A wave of niche employment websites have been created in recent years by individuals, community groups, businesses and non-profit organizations. This includes the general green niche employment sites that follow. However, this is just a sampling of what's available to green career explorers and job seekers. For a complete listing of hundreds of industry and occupation-specific resources, see the section in this resource guide entitled Industry and Occupation-Specific Resources.

Note: If this resource guide does not include an employment website that you think should be included, I would appreciate getting your feedback! Please see my website at www.cassio.com for my contact information/email address. Please note, however, that it is not in the scope of this resource guide to include listings of local employment websites or any sort of job boards that don't disclose a) who owns the site and b) their privacy policies.

General green niche employment sites listed alphabetically:

Care2.com - www.care2.com

Care2 launched in 1998 and has grown to become a substantial "green lifestyle" website which seeks to make it easy for everyone to live a healthy, green lifestyle and to impact the causes they care about most. The Care2 JobFinder is powered by the job search engine, Simply Hired.

Clean Edge Jobs - <http://jobs.cleannedge.com>

Clean Edge is a clean tech research and publishing firm founded in 2000. Clean Edge Jobs is a new job website for clean-tech job seekers and employers.

Clean Loop - www.cleanloop.com

CleanLoop is a new clean tech job board and news site launched in 2008 by VentureLoop, which claims to be the worldwide leader in job postings focused on venture-backed companies.

CleanTech.org - www.cleantech.org

CleanTech.org is a portal for energy and environmental technology commercialization (clean tech) and includes a job board. It was founded by Jane Capital Partners, a merchant bank based in San Francisco, California that specializes in clean tech commercialization.

CleanTechRecruits - www.cleantechrecruits.com

Job board includes jobs in the solar energy, wind energy, geothermal energy, biomass, biofuel, clean coal, green construction and hydropower sectors. Founded in 2008 by CleanTechRecruits, LLC., based in Norfolk, VA.

CoolWorks.com - www.coolworks.com

This website is about helping you find a seasonal job or career in a great place, such as a National or State Park, a ski resort, a theme park; or with one of the many state conservation corps or national conservation corps. Note that only *some* of their jobs would qualify as "protecting the environment." The site includes a privacy policy. CoolWorks.com is based in Gardiner, MT.

Cyber-Sierra's Natural Resources Job Search - www.cyber-sierra.com/nrjobs/

Very helpful resource for job seekers created and maintained by Jean Saffell - originally to help her husband find a job in the environmental field!

eco.ORG - www.eco.org

This site offers a full-service job board for eco-related jobs and job seekers. Includes a privacy policy. Owned by eco.ORG, Inc., based in Sedona, AZ.

EcoEmploy.com - www.ecoemploy.com

This environmental job board website is owned by David R. Brierley, an Environmental Analyst based in Malden, MA. The site includes a privacy policy and job seeker registration is not required. Includes a good list of links.

EnergyCentralJobs.com - www.energycentraljobs.com

This employment website for the power industry includes a large number of job listings from large and small utilities, smart grid companies, power generation and delivery companies, and various power industry subcontractors. Just one employer (Southern California Edison) has almost 200 current jobs listed.

EnviroEducation.com - www.enviroeducation.com

This site calls itself “The Environmental School Directory.” And while it leaves a lot to be desired, it is the best such directory that I’ve seen (which may have something to do with the fact that a comprehensive, accurate and user-friendly directory of green-related education and training programs doesn’t yet exist). In any case, you can use this site to search for environmental and related education programs and then link to the websites of those schools (for more info). Site owned by Monster.com.

Environmental Career Opportunities - www.ecojobs.com

ECO is an environmental job board website operated by Betty and Dan Brubach, based in Charlottesville, VA. Without a subscription, you can access 100 current job listings on their website. If you subscribe to their service (for less than \$1/day), you get 500 current job listings every two weeks. Registration is not required for non-subscribers.

Environmental Expert - www.environmental-expert.com

Environmental Expert claims to connect over 500,000 environmental industry professionals (from around the globe) to more than 11,400 companies that hire them. In a test search for environmental engineer job listings (in the US), results showed an impressive total of almost 100 jobs currently posted. However, a closer look at the job listings indicated that most of those were not actually for environmental engineer - which was the search term used. Even though the site’s job search tool does not work as efficiently as one might expect, the site is a rich source for industry-related information and resources, including publications, events, articles, and news. The site includes privacy policy and terms of use documents. Job seeker registration is not required, but you will need to provide the equivalent information if you try to apply for any of the jobs they have listed. Environmental Expert is based in Madrid, Spain.

Environmental-Jobs-Online - www.environmental-jobs-online.com

This website is actually a “portal” to WorkTree.com - a membership (fee) based job search site. WorkTree.com claims to be the largest job search portal in the world, but its fee-based approach makes it somewhat unusual - as job seekers are generally given free access to job listings while employers pay to post their job listings. On the other hand, the fees are actually quite minimal, so if WorkTree.com has found a way to add value that exceeds the competition (such as Monster.com), then they may be offering a fair deal to green career seekers.

Green Career Central - www.greencareercentral.com

If you’re looking for a green career, career counselor and author Carol McClelland created this subscription-based site to provide you with the guidance and support you need to match your passion for the environment, your skill set, and your experience. It includes tools to help you plan your career, find a job, and manage and advance in your career. McClelland is the author of *Your Dream Career for Dummies* and the upcoming *Green Careers for Dummies*. Yes, this is a subscription-based site. However, ask for a free trial to get started.

Green Careers Center (EnvironmentalCareer.com) - www.environmentalcareer.com

The Green Careers Center operates EnvironmentalCareer.com and publishes the *Green Careers Journal*. 2009 marks the 14th year of operation for this environmental job board website. The site is owned by the Environmental Career Center, based in Hampton, VA, and its founder is John Esson. The site includes a privacy policy and job seeker registration is not required.

Green Dream Jobs - www.sustainablebusiness.com/jobs

Environmental job board website owned by SustainableBusiness.com, based in Huntington Station, NY. They also publish a monthly newsletter called the *Progressive Investor*. The site includes a privacy policy and job seeker registration is not required. The site also includes an excellent list of links.

Green Gigs - <http://greengigs.blogspot.com/>

This site is a niche within a niche. Created by Lori Stewart for those interested in virtual green/environmental jobs where the work can be done at home.

Green Jobs Network - www.greenjobs.net

Offers a green job board, a green job e-mail list, a green collar jobs blog, and listings of green career events, other green job boards, and green recruiters.

GreenBiz.com - www.greenbiz.com/jobs

GreenBiz is a media company with a mission: To be the leading information resource on how to align environmental responsibility with business success. The site is owned by Greener World Media, Inc., based in Oakland, CA. The site includes a privacy policy and job seeker registration is not required.

Land Trust Alliance - www.lta.org

The Land Trust Alliance is a national association that represents more than 1,600 land trusts across America. Their “Alliance Jobs” page may be a bit hard to locate, but this would be a good place to search for administrative positions with land trusts and related organizations.

National Registry of Environmental Professionals - www.nrep.org

The NREP is a registry that seeks to provide legal and professional recognition of individuals possessing education, training and experience as environmental professionals. Their website does include a “Job Bank,” although it has a very small number of job listings. The site does not include privacy policy or terms of use documents for non-registrants; however, job seeker registration is not required and non-registrants are able to access the job listings. The site also offers a “Recruiters” page with a listing of recruitment or headhunting firms that specialize in serving environmental professionals.

National Wildlife Federation - www.nwf.org

Use this website to learn about jobs, internships and volunteer opportunities with the National Wildlife Federation, whose revenues totaled \$115 million in 2006. Most of those resources are spent on programs that include conducting scientific, policy, and legislative research, educating the public on issues relating to wildlife conservation policy and legislation, and taking legal action against environmental polluters and violators that threaten wildlife and wildlife habitat.

The Nature Conservancy - www.nature.org/careers/

The Nature Conservancy has projects in all 50 states and in more than 30 different countries around the world. It employs people in a variety of jobs that protect the lands and waters that our plants, animals and natural communities need to survive.

New Scientist - www.newscientist.com

Environmental science news, blogs, and special reports from the website of *New Scientist* magazine. This site also has a job board called “New Scientist Jobs.” The site includes privacy policy and terms of use documents, and job seeker registration is not required.

North American Association for Environmental Education - www.naaee.org

NAAEE is a professional association for people involved in environmental education. Their website includes a job board called “EE Jobs,” which is a good place to search for jobs in the environmental education field. In addition, the NAAEE site is an excellent resource for identifying environmental-related education programs.

The Orion Society - www.orionsociety.org

The Orion Society is a non-profit organization based in Great Barrington, MA. Its mission is to inform, inspire, and engage individuals and grassroots organizations in becoming a significant cultural force for healing nature and community. They publish *Orion* magazine, which the Boston Globe calls “America's finest environmental magazine.” The Orion Grassroots Network connects and empowers groups working for positive social and environmental change across North America and beyond. Orion’s Internship & Career Service has hundreds of job listings, internships, and AmeriCorps positions with members of the Orion Grassroots Network. The Orion Society also undertakes educational initiatives, including the Nature Literacy Series. Their job board does not include privacy policy or terms of use documents for non-members; however, job seeker registration is not required and non-members are able to access the job listings.

RenewableEnergyJobs.com - www.renewableenergyjobs.com

RenewableEnergyJobs.com was launched in 2009 and focuses on jobs in the solar power, wind energy, hydro, geothermal, wave, tidal, biomass and biofuels sectors. The site was founded by Sam Newell and is owned by Blew Future Limited, a company registered in the United Kingdom. However, the site focuses on renewable energy jobs all around the world, including in the United States.

The School for Field Studies - www.fieldstudies.org

SFS is an international non-profit educational organization that provides environmental education abroad and conducts research through its field-based programs. A small job board includes both academic/nonacademic job openings and internships in the U.S. and abroad.

TreeHugger - www.treehugger.com

TreeHugger describes itself as the leading media outlet dedicated to driving sustainability mainstream. With an impressive team of international writers, TreeHugger has become one of the most respected and visited environmental sites on the web in just 3 short years. In addition to the articles and the job board, TreeHugger offers green-themed blogs, weekly and daily newsletters, weekly video segments, and a weekly radio show. The site includes a privacy policy and job seeker registration is not required.

USAJOBS - www.usajobs.opm.gov

While this site is not exactly a green niche site, it is the Federal Government's official one-stop source for jobs with federal agencies, including green jobs.

Employer websites

To search the websites of specific employers for jobs (or job info), you generally start by creating a list of prospective employers. Your list may be all employers or select employers in a specific industry or geographic area. The criteria you use in developing your list depends on your needs and interests, as well as on what data sources you have available to you. Do you know how to put together a list of employers that you would like to work for? What resources would you use in developing such a list, and what information would you need for each employer? If you have doubts about how to proceed, consider consulting with a friendly librarian or a career center professional.

Remember that industry trade associations often include directories of their member organizations. Sometimes this will give you a better list of employers than using traditional employer databases. You might also find a local/regional business journal or magazine to be helpful in listing the *top employers* in various categories.

You may also find a local certification program for green/sustainable businesses. These programs are increasingly offered by cities, counties, consortiums and non-profit organizations in order to verify that the businesses they certify have met higher standards of environmental performance and responsibility. Although there is no central directory for the various green business certification programs that exist around the country, you can usually find out if there's a program in your area by doing a Google search (using these keywords): *green business certification [your city/county]*

Once you've created your list of prospective employers (including website addresses), you can browse their websites to research the employers and to look for job/career information. Often the employers' websites will have a menu option entitled *Careers* or *Jobs*. If they give you the option of applying for a job right then and there, better to slow down and take a step back - unless an application deadline is imminent. One tends to make mistakes when in a hurry, so you're almost always better off getting all the information you'll need and taking adequate time to prepare a quality application and to customize your resume. Unless you have the social skills of a Neanderthal, it is also to your advantage to talk to a real person (whenever possible) to learn more about the job and the employer. For a job seeker, quality always trumps quantity.

Job search engines

Whereas employment websites with job boards serve as repositories for job listings posted by employers and recruiters, job search engines use spider technology to collect information on millions of jobs from job boards, employer websites, and online newspaper classifieds. Think Google-for-jobs and you begin to get the idea. The advantage of job search engines (over job boards) is that you can get information on lots of possible jobs. The disadvantage is that the search returns usually include some duplication and outdated job postings. But job search engines can be extremely helpful as a research tool - to learn about an occupation when little or no information is available through other resources. For example, search for *wind energy technician* using one of the job search engines and you'll quickly discover where most of the job openings are located (e.g. Kansas and Texas), what are the hiring requirements, what do the jobs pay, and who are the employers? Job search engines are great tools for research - as long as you realize the limitations of the data from which you may draw conclusions.

The top three job search engines include:

- Indeed - www.indeed.com
- SimplyHired - www.simplyhired.com
- FlipDog - www.flipdog.com

Networking websites

LinkedIn at www.linkedin.com was designed as an online networking site for business professionals. However, in a short period of time, LinkedIn has also become *the* major online networking site for career explorers and job seekers. To make LinkedIn even more valuable to job seekers, it now has its own job board in addition to its networking tools. LinkedIn users are on average 41 years of age and earn \$110,000 per year. Most are networking for sales and business development purposes. About one in four are actively searching for a job.

Other online networking sites include Facebook and Ryze, among others. Facebook at www.facebook.com has the largest number of users, but it was designed to connect friends and not business associates or employees/employers. Thus Facebook is difficult for many to present themselves *professionally* for career networking purposes. Ryze at www.ryze.com was designed for business professionals and seems to attract young entrepreneurs.

Offline networking

Did you know that the majority of jobs are never advertised? So how do employers fill all those unadvertised positions? -By using referrals of all types, including personal referrals, professional referrals and referrals from employees. Small businesses in particular often feel they can get a better quality worker by hiring someone else's referral. To take advantage of this *hidden job market*, job seekers are encouraged to expand and utilize their personal and professional networks in the hopes of becoming one of the referred.

Some of the tools you can utilize for offline networking:

- Personal contact with everyone in your personal and professional networks (e.g. phone, face-to-face, letters/cards, email)
- Take advantage of green networking groups/events such as:
 - o Green Drinks - www.greendrinks.org
 - o EcoTuesday - www.ecotuesday.com
- Do informational interviews on a regular basis (see the article in this resource guide entitled Informational Interviews)
- Do volunteer work or unpaid internships to gain new skills and knowledge and to expand your network
- Take classes or pursue an educational program to acquire new skills and knowledge and to expand your network

Internships

See Penny's *Top Internship Sites* on About.com for help in finding internships of all varieties:
<http://internships.about.com/od/internsites/tp/internsites.htm>

Green education and training options

- Overview
- Finding a school or program
- Evaluating a school or program

Overview

With the growth of the new green economy, it is not surprising that new green education and training programs are popping up to meet the demand, including sometimes when the demand doesn't yet exist. Education and training programs include certificate and degree programs, as well as apprenticeship programs, for most of the 340 occupations identified in this resource guide. Sometimes those programs will be identified as *green* programs, but more often than not, they tend to be mainstream programs that have integrated some green knowledge or skills into their curriculum.

Such programs are generally a series of classes that one takes which results in a college degree, a certificate of completion, or certification or registration for a licensed occupation or profession. Of course, many classes can also be taken (or offered) independently of a program. But a single class does not generally constitute a *program*, even though some classes (such as workshops and seminars) may offer their own certificates of completion.

Postsecondary certificate and degree programs are found in both the public and private education sectors:

- public colleges and universities, including community colleges
- private schools, colleges, universities and training providers

Many educational institutions also offer online learning opportunities.

The vast majority of apprenticeship programs are private sector-based, but the education (classroom training) components of the program are often provided by public training providers such as community colleges.

The cost of education and training programs vary widely. As a general rule, private school programs are more expensive than public school programs because they are not supported by public revenue. But there are plenty of exceptions, too. In California, for example, PG&E (a large electric utility company) offers a variety of high quality classes in green building and energy efficiency subjects that are either free or very low cost. And then there are public universities with university extension programs that may cost several thousand dollars for a 6-12 month program. Apprenticeship programs may involve some education-related or tool/equipment expenses, but otherwise apprentices are typically paid 50% to 60% of a journeyman's wage while they complete their 2-5 years of training (depending on the occupation). This can vary with non-union apprenticeships, but the general rule remains that an apprentice is a paid employee with an employer who is willing to provide the work-based employment and training.

Finding a school or program

Unfortunately, a comprehensive, accurate and user-friendly directory of green-related education and training programs doesn't yet exist. So you'll have to do some research to find out where

your green education and training opportunities can be found. EnviroEducation.com (www.enviroeducation.com) calls itself *The Environmental School Directory*. And while it leaves a lot to be desired, it is the best such directory that I've seen. In any case, you can use this site to search for environmental and related education programs and then link to the websites of those schools (for more info). The site is owned by Monster.com. Also, don't overlook the possibility of your local career center having information on green-related education and training programs in your area. In many geographic areas, this would be your first and best option. Use America's Service Locator at www.servicelocator.org/onestopcenters.asp to find your local one-stop career center.

Evaluating a school or program

Education or training can be one of the biggest investments you'll make in your life, so you would be wise to maximize your investment of time and money. It's up to you to check out and evaluate the school and its program. Consider it your due diligence. Here are some things to ask about:

- Accreditation and licensing information: Find out what accrediting and licensing agencies have evaluated the school/program and found them to meet certain minimum requirements. What are those requirements?
- Program entry requirements and costs: Find out if assessment tests or prerequisite classes are required and what the *total costs* will be to complete the program.
- Occupational objectives: Ask about the objective of the program. For example, is the certificate or degree program designed to prepare a person for entry into a new job/career upon completion of the program? If so, then what jobs are the program completers likely to get after completion? If that's not the program's objective, then what is it? Who is the program designed for, exactly?
- Inside information: Be sure to talk to students (former students who are recent program completers are best), counselors, instructors or other knowledgeable people about the program. Any complaints about the school/program would have been filed with the local Better Business Bureau or the consumer protection division of your State Attorney General's Office.

Also for your consideration:

- Loan default rate: Asking about the school's loan default rate tells you the percentage of students who attended the school, took out federal student loans, and later went into default. A school with a high default rate will not be able to get Federal Student Aid (financial assistance) for its students. This can be the kiss of death for a private school.
- School job placement rates: If a school advertises its job placement rates, then it must also publish the statistics to back up its claims. Be aware that self-reported job placement rates are not always reliable and may be based on anecdotal information. Also be aware that job placement rates are not always comparable from one school to another. If you're going to compare rates, make sure you're comparing apples to apples.
- School completion and transfer-out rates: The Student Right-to-Know Act requires schools to disclose the percentage of its students that complete the school's programs, and the percentage of students that transfer out of the school.
- Refund policy: Note that even if you don't finish your coursework, you'll have to repay any loan funds you received (less any amount returned to your lender by the school).
- Campus security reports: Asking for these will give you information on the school's campus security policies and campus crime statistics.

Industry and Occupation-Specific Resources

Advertising Services

Resources and Associations:

- o American Advertising Federation (AAF) - www.aaf.org
- o American Association of Advertising Agencies (AAAA) - www.aaaa.org
- o American Marketing Association (AMA) - www.marketingpower.com
- o Career Guide to Industries: Advertising and Public Relations Services - www.bls.gov/oco/cg/cgs030.htm
- o Sales & Marketing Executives International (SMEI) - www.smei.org

Agriculture, Organic/Sustainable

Resources and Associations:

- o Agroecology Section, Ecological Society of America - www.esa.org/agroecology/
- o American Fisheries Society - www.fisheries.org
- o American Horticultural Society (AHS) - www.ahs.org
- o American Nursery and Landscape Association (ANLA) - www.anla.org
- o American Society for Horticulture Science (ASHS) - www.ashs.org
- o American Society of Agricultural and Biological Engineers - www.asabe.org
- o American Society of Farm Managers and Rural Appraisers - www.asfmra.org
- o aquaculturejobs.com - www.aquaculturejobs.com
- o Association of Environmental Engineering and Science Professors (AEESP) - www.aeesp.org
- o ATTRA, National Sustainable Agriculture Information Service - www.attra.ncat.org
- o BiologyJobs.com - www.biologyjobs.com
- o California Native Plant Society (CNPS) - www.cnps.org
- o Career Guide to Industries: Agriculture, Forestry, and Fishing - www.bls.gov/oco/cg/cgs001.htm
- o Ecological Farming Association - <http://eco-farm.org>
- o Global Aquaculture Alliance - www.gaalliance.org
- o International Federation of Organic Agriculture Movements (IFOAM) - www.ifoam.org
- o National Agricultural Library (NAL) - www.nal.usda.gov
- o National Aquaculture Association (NAA) - www.thenaa.net
- o National Campaign for Sustainable Agriculture - www.sustainableagriculture.net
- o National FFA Organization - www.ffa.org
- o National Sustainable Agriculture Information Service (ATTRA) - <http://attra.ncat.org>
- o North American Fruit Explorers (NAFEX) - www.nafex.org
- o SCS (Scientific Certification Systems) - www.scscertified.com
- o Sustainable Agriculture Education Association (SAEA) - www.sustainableaged.org
- o Sustainable Agriculture Research and Education (SARE) - www.sare.org
- o U.S. Department of Agriculture (USDA) - www.usda.gov
- o U.S. Trout Farmers Association - www.ustfa.org
- o UC Santa Cruz, Center for Agroecology & Sustainable Food Systems - <http://casfs.ucsc.edu>
- o United Farm Workers of America (UFW) - www.ufw.org
- o World Aquaculture Society (WAS) - www.was.org

Alternative Fuels/Alternative Fuel Vehicles

Resources and Associations:

- o biodiesel-jobs.com - www.biodiesel-jobs.com
- o Career Guide to Industries: Motor Vehicle and Parts Manufacturing - www.bls.gov/oco/cg/cgs012.htm
- o Electric Auto Association - www.eaaev.org
- o Electric Vehicle Association of the Americas (EVAA) - www.evaa.org
- o ethanol-jobs.com - www.ethanol-jobs.com
- o Fuel Cells 2000 from the Breakthrough Technologies Institute (BTI) - www.fuelcells.org
- o Hybrid Cars & Alternative Fuels by Christine & Scott Gable - <http://alternativefuels.about.com>
- o Hydrogen and Fuel Cell Job Board - www.hydrogenassociation.org/jobs/
- o National Alternative Fuels Association - www.altfuels.us
- o National Alternative Fuels Training Consortium (NAFTC) - www.naftc.wvu.edu
- o National Hydrogen Association - www.hydrogenassociation.org
- o SAE International (Society of Automotive Engineers) - www.sae.org
- o Tesla Motors, Inc. - www.teslamotors.com

Bicycles

Resources and Associations:

- o Bicycle Manufacturers Association of America - no website
- o Bicycle Retailer & Industry News - www.bicycleretailer.com
- o National Bicycle Dealers Association (NBDA) - <http://nbda.com>

Biotech/Life Sciences

Resources and Associations:

- o BayBio - www.baybio.org
- o BIO Career Guide - www.accessexcellence.org/RC/CC/bio_intro.php
- o BiologyJobs.com - www.biologyjobs.com
- o Biotechnology Industry Organization (BIO) - www.bio.org
- o Career Guide to Industries: Pharmaceutical and Medicine Manufacturing - <http://stats.bls.gov/oco/cg/cgs009.htm>
- o Career Guide to Industries: Scientific Research and Development Services - www.bls.gov/oco/cg/cgs053.htm
- o GeneRef.com - <http://science.bio.org>
- o Jobs in Biotechnology - www.bls.gov/opub/ooq/2002/fall/art03.pdf

Cleaning & Janitorial Services

Resources and Associations:

- o Association of Residential Cleaning Professionals (ARCSI) - www.arcp.us
- o DestinationGreen - www.destinationgreen.com
- o Global Cleaning Association, Cleaning and Janitorial Business Owner Forum - www.globalcleaningassociation.com/forums/
- o Green Clean Schools - http://healthyschoolscampaign.org/campaign/green_clean_schools/
- o Green Cleaning For Dummies - www.greencleaningfordummies.com
- o Green Cleaning Network - www.greencleaningnetwork.org

- o Institute of Inspection Cleaning and Restoration (IICRC) - www.iicrc.org
- o International Janitorial Cleaning Services Association (IJCSA) - www.ijcsa.org
- o International Window Cleaner Certification Institute - www.iwccci.org
- o International Window Cleaning Association (IWCA) - www.iwca.org
- o ISSA (Worldwide Cleaning Industry Association) - www.issa.com
- o Power Washers of North America (PWNA) - www.pwna.org
- o Zero Waste Alliance - www.zerowaste.org

Clothing & Accessories, Organic/Recycled Material

Resources and Associations:

- o Career Guide to Industries: Clothing, Accessory, and General Merchandise Stores - www.bls.gov/oco/cg/cgs022.htm
- o Career Guide to Industries: Textile, Textile Product, and Apparel Manufacturing - www.bls.gov/oco/cg/cgs015.htm
- o Career Guide to Industries: Wholesale Trade - www.bls.gov/oco/cg/cgs026.htm
- o Organic Clothing News & Views from LotusOrganics.com - www.lotusorganics.com/NewsViews.aspx
- o Organic Consumers Association - www.organicconsumers.org/clothes/
- o Organic Directory from the Soil Association - www.whyyorganic.org/involved_organicDirectory.asp
- o Organic Trade Association (OTA) - www.ota.com
- o Organic.org - www.organic.org

Ecotourism

Resources and Associations:

- o EcoBusinessLinks - www.ecobusinesslinks.com
- o ECOCLUB (Ecotourism Jobs) - <http://ecoclub.com/jobs/>
- o International Ecotourism Society (TIES) - www.ecotourism.org
- o Leave No Trace - www.lnt.org
- o Planeta.com - www.planeta.com
- o Tread Lightly! - www.treadlightly.org
- o Tourism Concern - www.tourismconcern.org.uk

Engineering Services

Resources and Associations:

- o Air & Waste Management Association (AWMA) - www.awma.org
- o American Academy of Environmental Engineers (AAEE) - www.aaee.net
- o American Association for Aerosol Research (AAAR) - www.aaar.org
- o American Chemical Society (ACS) - www.acs.org
- o American Geophysical Union (AGU) - www.agu.org
- o American Institute of Chemical Engineers (AIChE) - www.aiche.org
- o American Society of Agricultural and Biological Engineers - www.asabe.org
- o American Society of Certified Engineering Technicians (ASCET) - www.ascet.org
- o American Society of Civil Engineers (ASCE) - www.asce.org
- o American Society of Mechanical Engineers (ASME) - www.asme.org
- o American Solar Energy Society (ASES) - www.ases.org
- o Association for Environmental Health and Sciences (AEHS) - www.aehs.com

- o Association of Conservation Engineers (ACE) - <http://conservationengineers.org>
- o Association of Environmental Engineering and Science Professors (AEESP) - www.aeesp.org
- o Association of Environmental Professionals (AEP) - <http://califaep.org>
- o Career Guide to Industries: Chemical Manufacturing - www.bls.gov/oco/cg/cgs008.htm
- o Career Guide to Industries: Management, Scientific, and Technical Consulting Services - www.bls.gov/oco/cg/cgs037.htm
- o Engineering Central - www.engcen.com
- o EnvironmentalEngineer.com - www.environmentalengineer.com
- o Green Chemistry Institute - www.chemistry.org
- o Green Mechanical Council (GreenMech) - www.greenmech.org
- o Institute of Electrical and Electronics Engineers - www.ieeeusa.org
- o National Institute for Certification in Engineering Technologies (NICET) - www.nicet.org
- o Natural Resources Conservation Service (NRCS) - www.nrcs.usda.gov
- o National Society of Professional Engineers - www.nspe.org
- o Solar Energy Industries Association (SEIA) - www.seia.org
- o U.S. Green Building Council/LEED AP Certification - www.usgbc.org

Environmental Services

Resources and Associations:

- o Academy of Certified Hazardous Materials Managers (ACHMM) - www.achmm.org
- o American Academy of Forensic Sciences (AAFS) - www.aafs.org
- o American Association for the Advancement of Science (AAAS) - www.aaas.org
- o American Association of Pharmaceutical Scientists (AAPS) - www.aapspharmaceutica.com
- o American Association of State Climatologists (AASC) - www.stateclimate.org
- o American Association of Zoo Keepers (AAZK) - www.aazk.org
- o American Board of Industrial Hygiene (ABIH) - www.abih.org
- o American Chemical Society (ACS) - www.acs.org
- o American Geological Institute (AGI) - www.agiweb.org
- o American Geophysical Union (AGU) - www.agu.org
- o American Industrial Hygiene Association (AIHA) - www.aiha.org
- o American Institute of Biological Sciences (AIBS) - www.aibs.org
- o American Institute of Hydrology (AIH) - www.aihydro.org
- o American Institute of Physics (AIP) - www.aip.org
- o American Meteorological Society (AMS) - www.ametsoc.org
- o American Physical Society (APS) - www.aps.org
- o American Society for Biochemistry and Molecular Biology (ASBMB) - www.asbmb.org
- o American Society for Microbiology (ASM) - www.asm.org
- o American Society of Agronomy (ASA) - www.agronomy.org
- o American Society of Consulting Arborists (ASCA) - www.asca-consultants.org
- o American Society of Plant Biologists (ASPB) - www.aspb.org
- o American Society of Safety Engineers - www.asse.org
- o American Water Works Association - www.awwa.org
- o Association for Environmental Health and Sciences (AEHS) - www.aehs.com

- o Association of American Geographers (AAG) - www.aag.org
- o Association of Boards of Certification (ABC) - www.abccert.org
- o Association of Consulting Foresters of America (ACF) - www.acf-foresters.org
- o Association of Environmental & Engineering Geologists (AEG) - www.aegweb.org
- o Association of Environmental Engineering and Science Professors (AEESP) - www.aeesp.org
- o Association of Environmental Professionals (AEP) - www.califaep.org
- o Association of Zoos and Aquariums (AZA) - www.aza.org
- o BiologyJobs.com - www.biologyjobs.com
- o Biophysical Society - www.biophysics.org
- o Board of Certified Safety Professionals (BCSP) - www.bcsp.org
- o Career Guide to Industries: Management, Scientific, and Technical Consulting Services - www.bls.gov/oco/cg/cgs037.htm
- o Continuing Challenge Hazmat Workshop - www.hazmat.org
- o Council on Certification of Health, Environmental, and Safety Technologists (CCHST) - www.cchest.org
- o EHSCareers.com (Environmental Health & Safety) - www.ehscareers.com
- o Ecological Society of America (ESA) - www.esa.org
- o Environmental Protection Agency (EPA) - www.epa.gov
- o Environmental Sciences Research Institute (ESRI) - www.esri.com
- o EnvironmentalEngineer.com - www.environmentalengineer.com
- o Forest Guild - www.forestguild.org
- o Geography Jobs (article) - www.bls.gov/opub/ooq/2005/spring/art01.pdf
- o Global Association of Online Foresters (GAOF) - www.foresters.org
- o Health Physics Society (HPS) - www.hps.org
- o Indoor Air Quality Association (IAQA) - www.iaqa.org
- o Indoor Environmental Institute (IEI) - www.ieinstitute.org
- o Institute of Inspection, Cleaning and Restoration Certification (IICRC) - www.iicrc.org
- o INTECOL, the International Association for Ecology - www.intecol.net
- o International Association for Environmental Hydrology - <http://hydroweb.com>
- o International Association of Hazardous Materials Technicians (IAHMT) - www.iahmt.com
- o International Association of Hydrogeologists (IAH) - www.iah.org
- o International Association of Meteorology and Atmospheric Sciences (IAMAS) - www.iamas.org
- o International Society for Environmental Epidemiology (ISEE) - www.iseepi.org
- o International Society of Arboriculture (ISA) - www.isa-arbor.com
- o International Society of Sustainability Professionals (ISSP) - <http://sustainabilityprofessionals.org>
- o Journal of Exposure Science and Environmental Epidemiology - www.nature.com/jes/
- o Marine Geology and Geophysics at MIT - <http://web.mit.edu/mit-who/whoi/www/research/mgg/>
- o NAEM - National Association for EHS Management - www.naem.org
- o National Association of Conservation Districts (NACD) - www.nacdnet.org
- o National Association of Environmental Professionals (NAEP) - www.naep.org
- o National Environmental Health Association (NEHA) - www.neha.org
- o National Oceanic and Atmospheric Administration (NOAA) - www.noaa.gov

- o National Rural Water Association (NRWA) - www.nrwa.org
- o National Safety Council (NSC) - www.nsc.org
- o National Weather Service - www.nws.noaa.gov
- o Natural Resources Conservation Service (NRCS) - www.nrcs.usda.gov
- o Occupational Safety and Health Administration (OSHA) - www.osha.gov
- o Pharmaceutical Research and Manufacturers of America (PhRMA) - www.phrma.org
- o Restoration Industry Association (RIA) - www.ascr.org
- o Society of American Foresters (SAF) - www.safnet.org
- o Society of Environmental Toxicology and Chemistry (SETAC) - www.setac.org
- o Society of Toxicology (ST) - www.toxicology.org
- o Soil and Water Conservation Society (SWCS) - www.swcs.org
- o Soil Science Society of America (SSSA) - www.soils.org
- o Tree Care Industry Association (TCIA) - www.treecareindustry.org
- o U.S. Dept. of Agriculture, Forest Service - www.fs.fed.us
- o U.S. Dept. of Agriculture, National Resources Conservation Service - www.nrcs.usda.gov
- o U.S. Environmental Protection Agency (EPA) - www.epa.gov
- o U.S. Geological Survey - Water Resources of the United States - <http://water.usgs.gov>
- o USAJOBS - www.usajobs.gov
- o Water Environment Federation (WEF) - www.wef.org

Food Processing/Manufacturing, Natural/Organic

Resources and Associations:

- o American Fisheries Society - www.fisheries.org
- o American Society of Agricultural and Biological Engineers - www.asabe.org
- o American Society of Farm Managers and Rural Appraisers - www.asfmra.org
- o aquaculturejobs.com - www.aquaculturejobs.com
- o ATTRA, National Sustainable Agriculture Information Service - www.attra.ncat.org
- o Career Guide to Industries: Food Manufacturing - www.bls.gov/oco/cg/cgs011.htm
- o Global Aquaculture Alliance - www.gaalliance.org
- o National Aquaculture Association (NAA) - www.thenaa.net
- o Organic Trade Association (OTA) - www.ota.com

Food Services, Natural/Organic

Resources and Associations:

- o Career Guide to Industries: Food Services and Drinking Places - www.bls.gov/oco/cg/cgs023.htm
- o Career Guide to Industries: Grocery Stores - www.bls.gov/oco/cg/cgs024.htm
- o Green Restaurant Association (GRA) - www.dinegreen.com
- o Organic Trade Association (OTA) - www.ota.com

Geography & GIS Services

Resources and Associations:

- o Association of American Geographers (AAG) - www.aag.org
- o Association of Environmental Engineering and Science Professors (AEESP) - www.aeesp.org

- o Environmental Sciences Research Institute (ESRI) - www.esri.com
- o Occupational Outlook Quarterly: Geography Jobs - www.bls.gov/opub/ooq/2005/spring/art01.pdf
- o University Consortium for Geographic Information Science - www.ucgis.org

Government Agencies

Resources and Associations:

- o American Academy of Forensic Sciences (AAFS) - www.aafs.org
- o American Association for Health Education (AAHE) - www.aahperd.org/aahe/
- o American Association of Pharmaceutical Scientists (AAPS) - www.aapspharmaceutica.com
- o American Association of State Climatologists (AASC) - www.stateclimate.org
- o American Chemical Society (ACS) - www.acs.org
- o American Fisheries Society - www.fisheries.org
- o American Geological Institute (AGI) - www.agiweb.org
- o American Geophysical Union (AGU) - www.agu.org
- o American Horticultural Society (AHS) - www.ahs.org
- o American Institute of Biological Sciences (AIBS) - www.aibs.org
- o American Institute of Hydrology (AIH) - www.aihydro.org
- o American Institute of Physics (AIP) - www.aip.org
- o American Meteorological Society (AMS) - www.ametsoc.org
- o American Physical Society (APS) - www.aps.org
- o American Planning Association (APA) - www.planning.org
- o American Society for Biochemistry and Molecular Biology (ASBMB) - www.asbmb.org
- o American Society for Microbiology (ASM) - www.asm.org
- o American Society of Agronomy (ASA) - www.agronomy.org
- o American Water Works Association - www.awwa.org
- o AmeriCorps - www.americorps.org
- o Association for Environmental Health and Sciences (AEHS) - www.aehs.com
- o Association of American Geographers (AAG) - www.aag.org
- o Association of Boards of Certification (ABC) - www.abccert.org
- o Association of Collegiate Schools of Planning (ACSP) - www.acsp.org
- o Association of Environmental & Engineering Geologists (AEG) - www.aegweb.org
- o Association of Environmental Engineering and Science Professors (AEESP) - www.aeesp.org
- o Association of Environmental Health Academic Programs (AEHAP) - www.aehap.org
- o Association of Environmental Professionals (AEP) - www.califaep.org
- o Association of National Park Rangers (ANPR) - www.anpr.org
- o ATTRA / National Sustainable Agriculture Information Service - www.attra.ncat.org
- o Biophysical Society - www.biophysics.org
- o Career Guide to Industries: Federal Government - www.bls.gov/oco/cg/cgs041.htm
- o Career Guide to Industries: State and Local Government - www.bls.gov/oco/cg/cgs042.htm
- o Centers for Disease Control and Prevention (CDC) - www.cdc.gov

- o DOE Jobs ONLINE from the U.S. Department of Energy - <http://chris.doe.gov/jobs/>
- o Ecological Farming Association - <http://eco-farm.org>
- o Ecological Society of America (ESA) - www.esa.org
- o Engineering Central - www.engcen.com
- o Environmental Lawyers.com - www.environmentallawyers.com
- o Environmental Sciences Research Institute (ESRI) - www.esri.com
- o Forest Guild - www.forestguild.org
- o Occupational Outlook Quarterly: Geography Jobs - www.bls.gov/opub/ooq/2005/spring/art01.pdf
- o Global Aquaculture Alliance - www.gaalliance.org
- o Global Association of Online Foresters (GAOF) - www.foresters.org
- o Health Physics Society (HPS) - www.hps.org
- o Institute for Public Relations (IPR) - www.instituteforpr.org
- o International Association for Environmental Hydrology - <http://hydroweb.com>
- o International Association of Hydrogeologists (IAH) - www.iah.org
- o International Association of Meteorology and Atmospheric Sciences (IAMAS) - www.iamas.org
- o International Code Council (ICC) - www.iccsafe.org/training/contract/insp-c.html
- o International Network for Environmental Compliance and Enforcement (INECE) - www.inece.org
- o International Society for Environmental Epidemiology (ISEE) - www.iseepi.org
- o International Society of Sustainability Professionals (ISSP) - <http://sustainabilityprofessionals.org>
- o Journal of Exposure Science and Environmental Epidemiology - www.nature.com/jes/
- o National Agricultural Library (NAL) - www.nal.usda.gov
- o National Aquaculture Association (NAA) - www.thenaa.net
- o National Association for Interpretation (NAI) - www.interpnet.com
- o National Association of Conservation Districts (NACD) - www.nacdnet.org
- o National Association of Environmental Professionals (NAEP) - www.naep.org
- o National Campaign for Sustainable Agriculture - www.sustainableagriculture.net
- o National Commission for Health Education Credentialing (NCHEC) - www.ncheec.org
- o National Environmental Health Association (NEHA) - www.neha.org
- o National Oceanic and Atmospheric Administration (NOAA) - www.noaa.gov
- o National Parks Conservation Association (NPCA) - www.eparks.org
- o National Recycling Coalition (NRC) - www.nrc-recycle.org
- o National Registry of Environmental Professionals (NREP) - www.nrep.org
- o National Rural Water Association (NRWA) - www.nrwa.org
- o National Society of Professional Engineers - www.nspe.org
- o National Weather Service - www.nws.noaa.gov
- o Natural Resources Conservation Service (NRCS) - www.nrcs.usda.gov
- o North American Association of Environmental Education (NAAEE) - www.naaee.org
- o North American Wildlife Enforcement Officers Association (NAWEOA) - www.naweo.org
- o Occupational Safety and Health Administration (OSHA) - www.osha.gov

- o Planetizen: The Planning & Development Network - www.planetizen.com
- o Public Relations Society of America (PRSA) - www.prsa.org
- o Recycler's World - www.recycle.net
- o Society for Public Health Education (SOPHE) - www.sophe.org
- o Society for Range Management (SRM) - www.rangelands.org/srm.shtml
- o Society of American Foresters (SAF) - www.safnet.org
- o Society of Environmental Toxicology and Chemistry (SETAC) - www.setac.org
- o Society of Toxicology (ST) - www.toxicology.org
- o Soil and Water Conservation Society (SWCS) - www.swcs.org
- o Soil Science Society of America (SSSA) - www.soils.org
- o Solid Waste Association of North America (SWANA) - www.swana.org
- o Sustainable Agriculture Education Association (SAEA) - www.sustainableaged.org
- o Sustainable Agriculture Research and Education (SARE) - www.sare.org
- o U.S. Army Corps of Engineers - www.usace.army.mil
- o U.S. Department of Justice, Environment and Natural Resources Division (ENRD) - www.usdoj.gov/enrd/
- o U.S. Dept. of Agriculture, Forest Service - www.fs.fed.us
- o U.S. Dept. of Agriculture, National Resources Conservation Service - www.nrcs.usda.gov
- o U.S. Department of Energy (DOE) - www.doe.gov
- o U.S. Department of the Interior, Bureau of Land Management (BLM) - www.blm.gov
- o U.S. Department of the Interior, National Park Service - www.nps.gov
- o U.S. Environmental Protection Agency (EPA) Environmental Accounting Resources - www.epa.gov/oppt/library/pubs/archive/acct-archive/resources.htm
- o U.S. Fish and Wildlife Service - www.fws.gov
- o U.S. Forest Service - www.fs.fed.us
- o U.S. Geological Survey - www.usgs.gov
- o U.S. Geological Survey - Water Resources of the United States - <http://water.usgs.gov>
- o U.S. Green Building Council/LEED AP Certification - www.usgbc.org
- o UC Santa Cruz, Center for Agroecology & Sustainable Food Systems - <http://casfs.ucsc.edu>
- o USAJOBS - www.usajobs.gov
- o Water Environment Federation (WEF) - www.wef.org
- o World Aquaculture Society (WAS) - www.was.org

Green Building, Sustainable Design & Energy Efficiency

Resources and Associations:

- o American Institute of Architects (AIA) - www.aia.org
- o American Society of Interior Designers (ASID) - www.asid.org
- o American Solar Energy Society - www.ases.org
- o Americas Glass Association - www.americasglassassn.org
- o Architects/Designers/Planners for Social Responsibility (ADPSR) - www.adpsr.org
- o Associated Builders and Contractors (ABC) - www.trytools.org
- o Associated General Contractors of America (AGC) - www.agc.org
- o Association of the Wall and Ceiling Industry (AWCI) - www.awci.org

- o BigGreen Discussion Group (sustainable design and construction) - www.biggreen.org
- o Building Industry Association (BIA) - www.bia.net
- o Building Materials Reuse Association - www.bmra.org
- o BuildingGreen.com - www.buildinggreen.com
- o California Solar Energy Industries Association (CALSEIA) - www.calseia.org
- o Career Guide to Industries: Construction - www.bls.gov/oco/cg/cgs003.htm
- o Certified Floorcovering Installers Association (CFI) - www.cfiinstallers.com
- o Council for Interior Design Accreditation - www.accredit-id.org
- o Engineering Central - www.engcen.com
- o Flooring Contractors Association (FCICA) - www.fcica.com
- o Green Building Initiative (GBI) - www.thegbi.org
- o Habitat for Humanity - www.habitat.org
- o Home Builders Institute - www.hbi.org
- o Independent Electrical Contractors (IEC) - www.ieci.org
- o Insulation Contractors Association of America (ICAA) - www.insulate.org
- o Intern Development Program (IDP) - www.aia.org/ep_home_getlicensed
- o International Brotherhood of Electrical Workers (IBEW) - www.ibew.org
- o International Union of Bricklayers and Allied Craftworkers (BAC) - www.bacweb.org
- o International Union of Painters and Allied Trades (IUPAT) - www.iupat.org
- o Mason Contractors Association of America (MCAA) - www.masoncontractors.org
- o Masonry Institute of America (MIA) - www.masonryinstitute.org
- o Master Painters and Decorators Association (MPDA) - www.paintinfo.com/assoc/mpda/
- o National Association of Home Builders (NAHB) - www.nahb.org
- o National Association of Schools of Art and Design (NASAD) - <http://nasad.arts-accredit.org>
- o National Center for Construction Education and Research (NCCER) - www.nccer.org
- o National Concrete Masonry Association (NCMA) - www.ncma.org
- o National Council for Interior Design Qualification (NCIDQ) - www.ncidq.org
- o National Council of Architectural Registration Boards (NCARB) - www.ncarb.org
- o National Electrical Contractors Association (NECA) - www.necanet.org
- o National Insulation Association (NIA) - www.insulation.org
- o National Joint Apprenticeship Training Committee (NJATC) - www.njatc.org
- o National Roofing Contractors Association (NRCA) - www.nrca.net
- o National Society of Professional Engineers - www.nspe.org
- o National Terrazzo and Mosaic Association (NTMA) - www.ntma.com
- o National Tile Contractors Association (NTCA) - www.tile-assn.com
- o Natural Building Network - www.naturalbuildingnetwork.org
- o North American Board of Certified Energy Practitioners (NABCEP) - www.nabcep.org
- o Operative Plasterers and Cement Masons International Association (OPCMIA) - www.opcmia.org
- o Painting & Decorating Contractors of America (PDCA) - www.pdca.org
- o Plumbing-Heating-Cooling Contractors Association (PHCC) - www.phccweb.org

- o SCS (Scientific Certification Systems) - www.scscertified.com
- o Solar Energy Industries Association - www.seia.org
- o Solar Energy International (SEI) - www.solarenergy.org
- o Solar Living Institute - www.solarliving.org
- o Solar Rating and Certification Corporation (SRCC) - www.solar-rating.org
- o U.S. Green Building Council/LEED AP Certification - www.usgbc.org
- o United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry - www.ua.org
- o United Brotherhood of Carpenters and Joiners of America (UBC) - www.carpenters.org
- o United Union of Roofers, Waterproofers, and Allied Workers - www.unionroofers.org

Investment Services, Sustainable/Socially Responsible Investing (SRI)

Resources and Associations:

- o Career Guide to Industries: Securities, Commodities, and Other Investments - www.bls.gov/oco/cg/cgs029.htm
- o Social Investment Forum - www.socialinvest.org
- o Ceres (Coalition for Environmentally Responsible Economies) - www.ceres.org
- o Sustainable Investments Directory - www.ecobusinesslinks.com/sustainable-investments.htm

Journalism & Publishing

Resources and Associations:

- o American Society of Newspaper Editors - www.asne.org
- o Association of American Publishers - www.publishers.org
- o Career Guide to Industries: Publishing - www.bls.gov/oco/cg/cgs013.htm
- o Committee of Concerned Journalists (CCJ) - www.concernedjournalists.org
- o Green Press Initiative - www.greenpressinitiative.org
- o Magazine Publishers of America - www.magazine.org
- o Newspaper Association of America - www.naa.org
- o Project for Excellence in Journalism (PEJ) - www.journalism.org
- o Society of Environmental Journalists (SEJ) - www.sej.org

Landscaping & Habitat Restoration Services

Resources and Associations:

- o American Society for Horticulture Science (ASHS) - www.ashs.org
- o American Society of Consulting Arborists (ASCA) - www.asca-consultants.org
- o American Society of Landscape Architects (ASLA) - www.asla.org
- o Association for Environmental Health and Sciences (AEHS) - www.aehs.com
- o Association of Professional Landscape Designers (APLD) - www.apld.com
- o California Native Plant Society (CNPS) - www.cnps.org
- o California Society for Ecological Restoration (SERCAL) - www.sercal.org
- o Council of Landscape Architectural Registration Boards - www.clarb.org
- o International Society of Arboriculture (ISA) - www.isa-arbor.com
- o North American Fruit Explorers (NAFEX) - www.nafex.org
- o Occupational Outlook Quarterly: Careers in the Green Industry (for people with green thumbs) - www.bls.gov/opub/ooq/2005/spring/art03.pdf

- o PLANET, the Professional Landcare Network - www.landcarenetwork.org
- o Primer on Ecological Restoration from SER International - www.ser.org/pdf/primer3.pdf
- o Professional Grounds Management Society (PGMS) - www.pgms.org
- o Society for Ecological Restoration (SER) - www.ser.org
- o Tree Care Industry Association (TCIA) - www.treecareindustry.org
- o U.S. Department of Agriculture (USDA) - www.usda.gov

Legal Services, Environmental/Regulatory and Land Use Law

Resources and Associations:

- o American Bar Association (ABA) - www.abanet.org
- o Earthjustice - www.earthjustice.org
- o Environmental Law Alliance Worldwide (ELAW) - www.elaw.org
- o Environmental Law and Policy Center (ELPC) - www.elpc.org
- o Environmental Lawyers.com - www.environmentallawyers.com
- o Law School Admission Council (LSAC) - www.lsac.org
- o lawjobs.com Career Center - www.law.com/jsp/law/careercenter/index.jsp
- o Lawyers Weekly Jobs - www.lawyersweeklyjobs.com
- o National Association for Law Placement (NALP) - www.nalp.org
- o U.S. Department of Justice, Environment and Natural Resources Division (ENRD) - www.usdoj.gov/enrd/

Natural Sciences Consulting Services

Resources and Associations:

- o American Academy of Forensic Sciences (AAFS) - www.aafs.org
- o American Association for the Advancement of Science (AAAS) - www.aaas.org
- o American Association of Pharmaceutical Scientists (AAPS) - www.aapspharmaceutica.com
- o American Association of State Climatologists (AASC) - www.stateclimate.org
- o American Association of Zoo Keepers (AAZK) - www.aazk.org
- o American Chemical Society (ACS) - www.acs.org
- o American Geological Institute (AGI) - www.agiweb.org
- o American Geophysical Union (AGU) - www.agu.org
- o American Institute of Biological Sciences (AIBS) - www.aibs.org
- o American Institute of Hydrology (AIH) - www.aihydro.org
- o American Institute of Physics (AIP) - www.aip.org
- o American Meteorological Society (AMS) - www.ametsoc.org
- o American Physical Society (APS) - www.aps.org
- o American Society for Biochemistry and Molecular Biology (ASBMB) - www.asbmb.org
- o American Society for Microbiology (ASM) - www.asm.org
- o American Society of Agronomy (ASA) - www.agronomy.org
- o American Society of Plant Biologists (ASPB) - www.aspb.org
- o Association for Environmental Health and Sciences (AEHS) - www.aehs.com
- o Association of Consulting Foresters of America (ACF) - www.acf-foresters.org
- o Association of Environmental & Engineering Geologists (AEG) - www.aegweb.org
- o Association of Environmental Engineering and Science Professors (AEESP) - www.aeesp.org

- o Association of Environmental Professionals (AEP) - www.califaep.org
- o Association of Zoos and Aquariums (AZA) - www.aza.org
- o BiologyJobs.com - www.biologyjobs.com
- o Biophysical Society - www.biophysics.org
- o California Native Plant Society (CNPS) - www.cnps.org
- o Career Guide to Industries: Management, Scientific, and Technical Consulting Services - www.bls.gov/oco/cg/cgs037.htm
- o Ecological Society of America (ESA) - www.esa.org
- o Forest Guild - www.forestguild.org
- o Global Association of Online Foresters (GAOF) - www.foresters.org
- o Health Physics Society (HPS) - www.hps.org
- o INTECOL, the International Association for Ecology - www.intecol.net
- o International Association for Environmental Hydrology - <http://hydroweb.com>
- o International Association of Hydrogeologists (IAH) - www.iah.org
- o International Association of Meteorology and Atmospheric Sciences (IAMAS) - www.iamas.org
- o International Society for Environmental Epidemiology (ISEE) - www.iseepi.org
- o International Society of Sustainability Professionals (ISSP) - <http://sustainabilityprofessionals.org>
- o Journal of Exposure Science and Environmental Epidemiology - www.nature.com/jes/
- o Marine Geology and Geophysics at MIT - <http://web.mit.edu/mit-who/ww/research/mgg/>
- o National Association of Conservation Districts (NACD) - www.nacdnet.org
- o National Association of Environmental Professionals (NAEP) - www.naep.org
- o National Oceanic and Atmospheric Administration (NOAA) - www.noaa.gov
- o National Weather Service - www.nws.noaa.gov
- o Natural Resources Conservation Service (NRCS) - www.nrcs.usda.gov
- o Pharmaceutical Research and Manufacturers of America (PhRMA) - www.phrma.org
- o Society of American Foresters (SAF) - www.safnet.org
- o Society of Environmental Toxicology and Chemistry (SETAC) - www.setac.org
- o Society of Toxicology (ST) - www.toxicology.org
- o Soil and Water Conservation Society (SWCS) - www.swcs.org
- o Soil Science Society of America (SSSA) - www.soils.org

Nonprofit Organizations, Green/Environmental

Resources and Associations:

- o Acterra: Action for a Sustainable Earth - www.acterra.org
- o Adirondack Mountain Club - www.adk.org
- o Allegheny Land Trust - www.alleghenylandtrust.org
- o American Bird Conservancy (ABC) - www.abcbirds.org
- o American Bison Society (ABS) - www.americanbisonsocietyonline.org
- o American Clean Skies Foundation (ACSF) - www.cleanskies.org
- o American Farmland Trust (AFT) - www.farmland.org
- o American Forests - www.americanforests.org
- o American Public Gardens Association (APGA) - www.publicgardens.org
- o American Society for the Prevention of Cruelty to Animals - www.asPCA.org
- o Appalachian Mountain Club (AMC) - www.outdoors.org
- o Appalachian Trail Conservancy (ATC) - www.appalachiantrail.org

- o Appalachian Voices - www.appvoices.org
- o Arbor Day Foundation - <http://arborday.org>
- o As You Sow - www.asyousow.org
- o Association of Environmental Professionals (AEP) - <http://califaep.org>
- o Association of Northwest Steelheaders (ANWS) - www.nwsteelheaders.org
- o Bark - www.bark-out.org
- o Blacksmith Institute - www.blacksmithinstitute.org
- o Blue Ridge Parkway Foundation - www.brpfoundation.org
- o Bonneville Environmental Foundation (BEF) - www.b-e-f.org
- o Boone and Crockett Club - www.boone-crockett.org
- o Branford Land Trust - www.branfordlandtrust.org/blt.html
- o Bullitt Foundation - www.bullitt.org
- o California League of Conservation Voters (CLCV) - www.ecovote.org
- o California Native Plant Society (CNPS) - www.cnps.org
- o Californians Against Waste - www.cawrecycles.org
- o Calumet Stewardship Initiative - www.calumetstewardshipinitiative.org
- o Capitol Land Trust (CLT) - www.capitolandtrust.org
- o Career Guide to Industries: Advocacy, Grantmaking, and Civic Organizations - www.bls.gov/oco/cg/cgs054.htm
- o Center for Biological Diversity - www.biologicaldiversity.org
- o Center for Northern Studies (CNS) - www.sterlingcollege.edu/CNS/about.htm
- o Ceres (Coalition for Environmentally Responsible Economies) - www.ceres.org
- o Chesapeake Bay Program - www.chesapeakebay.net
- o Chewonki Foundation - <http://www.chewonki.org>
- o Citizens for Alternatives to Chemical Contamination (CACC) - www.caccmi.org
- o Citizens for Pennsylvania's Future (PennFuture) - <http://www.pennfuture.org>
- o Clean Air Campaign - www.cleanaircampaign.com
- o Clean Air Conservancy - www.cleanairconservancy.org
- o Clean Edge - www.cleannedge.com
- o Clean Water Action - www.cleanwateraction.org
- o CleanCOalition - www.cleancoalition.org
- o Climate Counts - www.climatecounts.org
- o Coalition on the Environment and Jewish Life (COEJL) - www.coejl.org
- o Colorado Conservation Voters (CCV) - www.coloradoconservationvoters.org
- o Committee for Green Foothills - www.greenfoothills.org
- o Conservation International (CI) - www.conservation.org
- o Conservation Law Foundation (CLF) - www.clf.org
- o Defenders of Wildlife - www.defenders.org
- o Ducks Unlimited - www.ducks.org
- o Earth Force - www.earthforce.org
- o Earth Policy Institute - www.earth-policy.org
- o Earth Share - www.earthshare.org
- o Earthjustice - www.earthjustice.org
- o Earthwatch Institute - www.earthwatch.org
- o ecoAmerica - www.ecoamerica.net
- o Ecosystem Marketplace - www.ecosystemmarketplace.com
- o Ecotrust - www.ecotrust.org
- o Elephant Sanctuary (Tennessee) - www.elephants.com
- o Environment California - www.environmentcalifornia.org

- o Environmental and Energy Study Institute (EESI) - www.eesi.org
- o Environmental Defense Fund (EDF) - www.edf.org
- o Environmental Law Alliance Worldwide (ELAW) - www.elaw.org
- o Environmental Law and Policy Center (ELPC) - www.elpc.org
- o Environmental Working Group (EWG) - www.ewg.org
- o Food & Water Watch - www.foodandwaterwatch.org
- o Friends of the Earth (US) - www.foe.org
- o Georgia Wildlife Federation - www.gwf.org
- o Global Water Policy Project (GWPP) - www.globalwaterpolicy.org
- o GLOBIO - www.globio.org
- o Great Smoky Mountains Association (GSMA) - www.smokiesinformation.org
- o Great Swamp Watershed Association - www.greatswamp.org
- o Green Corps - www.greencorps.org
- o Green Light New Orleans - www.greenlightneworleans.org
- o Green Project - <http://thegreenproject.org>
- o Hazon - <http://hazon.org>
- o High Rock Lake Association (HRLA) - www.hrla.com
- o High Uintas Preservation Council (HUPC) - www.hupc.org
- o Honor The Earth - www.honorearth.org
- o Hudson River Sloop Clearwater - www.clearwater.org
- o Humane Society of the United States - www.humanesociety.org
- o Hummingbird Society - www.hummingbirdsociety.org
- o Huron Mountain Wildlife Foundation - www.hmwf.org
- o INFORM - <http://informinc.org>
- o Institute for Energy and Environmental Research (IEER) - www.ieer.org
- o Institute for Marine Mammal Studies (IMMS) - www.imms.org
- o Institute for Social Ecology - www.social-ecology.org
- o Integration and Application Network (IAN) - <http://ian.umces.edu>
- o International Rivers - <http://internationalrivers.org>
- o Izaak Walton League - www.iwla.org
- o Land Institute - www.landinstitute.org
- o Land Trust Alliance - www.landtrustalliance.org
- o Marine Mammal Center - www.marinemammalcenter.org
- o Mercury Policy Project (MPP) - www.mercurypolicy.org
- o Montana Wilderness Association - <http://wildmontana.org>
- o Monterey Bay Aquarium Foundation - www.montereybayaquarium.org
- o Murie Science and Learning Center - www.murieslc.org
- o National Audubon Society - www.audubon.org
- o National Coalition for Marine Conservation (NCMC) - www.savethefish.org
- o National Council for Science and the Environment (NCSE) - <http://ncseonline.org>
- o National Fish Habitat Action Plan - <http://fishhabitat.org>
- o National Parks Conservation Association (NPCA) - www.npca.org
- o National Wildlife Federation (NWF) - www.nwf.org
- o Native Forest Council - www.forestcouncil.org
- o Natural Lands Trust - www.natlands.org
- o Natural Resources Defense Council (NRDC) - www.nrdc.org
- o Nature Centers in the United States - http://en.wikipedia.org/wiki/List_of_nature_centers_in_the_United_States
- o Nature's Classroom - www.naturesclassroom.org

- o New American Dream - www.newdream.org
- o New England Grassroots Environment Fund (NEGEF) - www.grassrootsfund.org
- o New York-New Jersey Trail Conference (NYNJTC) - www.nynjtc.org
- o Northeast Wilderness Trust - www.newwildernesstrust.org
- o Northwest Service Academy (NWSA) - www.northwestserviceacademy.org
- o Ocean Arks International - www.oceanarks.org
- o Ocean Conservancy - www.oceanconservancy.org
- o Oceana - www.oceana.org
- o Office of Response and Restoration (OR&R) - <http://response.restoration.noaa.gov>
- o Ohio Citizen Action - www.ohiocitizen.org
- o Open Space Institute (OSI) - www.osiny.org
- o Oregon Water Trust (OWT) - www.owt.org
- o Pacific Islands Conservation Research Association (PICRA) - <http://picra.net>
- o Pheasants Forever - www.pheasantsforever.org
- o Planetfesto - www.planetfesto.org
- o Plenty International - www.plenty.org
- o Property and Environment Research Center - www.perc.org
- o Public Employees for Environmental Responsibility (PEER) - www.peer.org
- o Rainforest Action Network - www.ran.org
- o Rainforest Alliance - www.rainforest-alliance.org
- o RE3.org - www.re3.org
- o Reef Ball Foundation - www.reefball.org
- o Republicans for Environmental Protection (REP) - www.repamerica.org
- o Resources for the Future (RFF) - www.rff.org
- o Reverb - www.reverbrock.org
- o Rewilding Institute - www.rewilding.org
- o Riverkeeper - www.riverkeeper.org
- o Rocky Mountain Institute (RMI) - www.rmi.org
- o Round River Conservation Studies - www.roundriver.org
- o Rural Action - www.ruralaction.org
- o Save-the-Redwoods League - www.savetheredwoods.org
- o Seafood Watch - www.montereybayaquarium.org/cr/seafoodwatch.asp
- o SeaWorld & Busch Gardens Conservation Fund - www.swbg-conservationfund.org
- o Sempervirens Fund - www.sempervirens.org
- o Sierra Club - www.sierraclub.org
- o Sierra Club Foundation - tscf.org
- o Sierra Nevada Alliance - www.sierranevadaalliance.org
- o Sierra Student Coalition (SSC) - www.ssc.org
- o Social Venture Network (SVN) - www.svn.org
- o Sound Adirondack Growth Alliance (SAGA) - <http://soundgrowth.info>
- o Soundkeeper - www.soundkeeper.org
- o Southeastern Cave Conservancy, Inc. (SCCi) - www.sccci.org
- o Southern Alleghenies Conservancy - www.sac-sarcd.org
- o Southern Utah Wilderness Alliance (SUWA) - www.suwa.org
- o Student Conservation Association (SCA) - www.thesca.org
- o Student Environmental Action Coalition (SEAC) - www.seac.org
- o Sudbury Valley Trustees (SVT) - www.sudburyvalleytrustees.org
- o Superfund Basic Research Program (SBRP) - www.niehs.nih.gov/research/supported/sbrp

- o Tellus Institute - www.tellus.org
- o Tennessee Native Plant Society - www.tnps.org
- o The Nature Conservancy - www.nature.org
- o The Resource Foundation (TRF) - www.resourcefnd.org
- o Time's Up! - <http://times-up.org>
- o TreePeople - <http://treepeople.org>
- o Tri-State Bird Rescue and Research, Inc. - www.tristatebird.org
- o Trust for Public Land (TPL) - www.tpl.org
- o Trustees of Reservations (TTOR) - www.thetrustees.org
- o U.S. Institute for Environmental Conflict Resolution - www.ecr.gov
- o Ucross Foundation - www.ucrossfoundation.org
- o Union of Concerned Scientists (UCS) - www.ucsusa.org
- o Upper Chattahoochee Riverkeeper (UCR) - www.ucriverkeeper.org
- o Vermont Institute of Natural Science (VINS) - www.vinsweb.org
- o Vermont Land Trust - www.vlt.org
- o Vermont Natural Resource Council - www.vnrc.org
- o Voyageurs National Park Association - www.voyageurs.org
- o WILD Foundation - www.wild.org
- o Wildlife Society (TWS) - www.wildlife.org

Pesticide Services

Resources and Associations:

- o Organic Trade Association (OTA) - www.ota.com

Printing

Resources and Associations:

- o Career Guide to Industries: Printing - www.bls.gov/oco/cg/cgs050.htm
- o Conservatree - www.conservatree.org
- o Environmental Paper Network - www.environmentalpaper.org
- o Green Printing News from Barefoot Press - www.barefootpress.com/blog/
- o International Imaging Technology Council (Int'l ITC) - www.i-itc.org
- o Press Relations: How green printing can make a good impression - www.grist.org/biz/tp/2006/01/03/printing/
- o Printing Industries of America - www.gain.net

Public Relations Services

Resources and Associations:

- o Career Guide to Industries: Advertising and Public Relations Services - www.bls.gov/oco/cg/cgs030.htm
- o Council of Public Relations Firms - www.prfirms.org
- o Institute for Public Relations (IPR) - www.instituteforpr.org
- o International Association of Business Communicators (IABC) - www.iabc.com
- o National Association for Interpretation (NAI) - www.interpnet.com
- o Public Relations Society of America (PRSA) - www.prsa.org
- o True Spin Conference - www.truespinconference.com

Recycling

Resources and Associations:

- o Engineering Central - www.engcen.com
- o International Solid Waste Association (ISWA) - www.iswa.org
- o National Recycling Coalition - www.nrc-recycle.org
- o National Society of Professional Engineers - www.nspe.org
- o NORA - Association of Responsible Recyclers - www.noranews.org
- o Recycler's World - www.recycle.net
- o Recycling Industry Job Center - www.recycling.org
- o Recycling Today: Association Central - www.recyclingtoday.com/associations/
- o Solid Waste Association of North America (SWANA) - www.swana.org

Renewable Energy

Resources and Associations:

- o American Solar Energy Society (ASES) - www.ases.org
- o American Wind Energy Association - www.awea.org Also see their job website, Careers in Wind - www.careersinwind.com
- o California Biomass Energy Alliance (CBEA) - www.calbiomass.org
- o California Solar Energy Industries Association (CALSEIA) - www.calseia.org
- o Engineering Central - www.engcen.com
- o Green Energy Jobs - www.greenenergyjobs.com
- o Independent Energy Producers Association - www.iepa.com
- o International Solar Energy Society (ISES) - www.ises.org
- o National Association of Energy Service Companies (NAESCO) - www.naesco.org
- o National Renewable Energy Laboratory (NREL) - www.nrel.gov
- o National Society of Professional Engineers - www.nspe.org
- o North American Board of Certified Energy Practitioners (NABCEP) - www.nabcep.org
- o RenewableEnergyWorld.com - www.renewableenergyworld.com
- o Solar Electric Power Association - www.solarelectricpower.org
- o Solar Energy Industries Association (SEIA) - www.seia.org
- o Solar Energy International (SEI) - www.solarenergy.org
- o Solar Living Institute - www.solarliving.org
- o Solar Rating and Certification Corporation (SRCC) - www.solar-rating.org
- o Sustainable Buildings Industry Council - www.sbicouncil.org
- o U.S. Department of Energy, Biomass Program - www.eere.energy.gov/biomass/
- o U.S. Department of Energy, National Energy Technology Laboratory (NETL) - www.netl.doe.gov
- o USA Biomass - www.usabiomass.org
- o Wind Industry Jobs - www.windindustryjobs.com

Utilities (electric and water)

Resources and Associations:

- o Alliance to Save Energy - www.ase.org
- o American Gas Association (AGA) - www.aga.org
- o American Public Energy Agency (APEA) - www.apea.org
- o American Public Gas Association - www.apga.org
- o American Public Power Association - www.appanet.org

- o American Public Works Association (APWA) - www.apwa.net
- o Association of Energy Engineers - www.aeecenter.org
- o Association of Energy Services Professionals AESP - www.aesp.org
- o Career Guide to Industries: Utilities - www.bls.gov/oco/cg/cgs018.htm
- o Edison Electric Institute (EEI) - www.eei.org
- o Electric Power Research Institute EPRI - <http://my.epri.com>
- o Electric Power Supply Association - www.epsa.org
- o EnergyCentralJobs.com - www.energycentraljobs.com
- o Engineering Central - www.engcen.com
- o Green Energy Jobs - www.greenenergyjobs.com
- o Institute of Public Utilities - www.ipu.msu.edu
- o National Hydropower Association (NHA) - www.hydro.org
- o National Society of Professional Engineers - www.nspe.org
- o Propane Gas Association - National - www.npga.org
- o U.S. Department of Energy, National Energy Technology Laboratory (NETL) - www.netl.doe.gov
- o Utility Wind Integration Group (UWIG) - www.uwig.org
- o Water Environment Federation (WEF) - www.wef.org

Green Jobs and the Economic Stimulus Plan

By Jim Cassio

The Economic Stimulus Plan, now called the American Recovery and Reinvestment Act of 2009, invests nearly \$800 billion over a two year period in order to stimulate the economy and save existing jobs as well as create new jobs. But a chunk of that investment (an impressive \$60 billion by some accounts) is strategically targeted to stimulate growth of certain clean/green industries and technologies with the intention of creating many new green jobs. The green job growth is targeted in the fields of clean/alternative energy, scientific research, and various environmental projects. Here's how the green investment breaks down:

High Tech and Clean/Green Tech Provisions (nearly \$30 billion)

- \$11 billion for smart-grid related activities, including work to modernize the electric grid.
- \$6.3 billion for energy efficiency and conservation grants.
- \$2.5 billion for energy efficiency and renewable energy research.
- \$2 billion in grant funding for the manufacturing of advanced batteries systems and components and vehicle batteries that are produced in the United States.
- \$6 billion for new loan guarantees aimed at renewable energy projects such as wind or solar projects and for electricity transmission projects.
- \$1 billion for other energy efficiency programs, including alternative fuel trucks and buses, transportation charging infrastructure, and smart and energy efficient appliances.

Science and Energy Funding and Incentives (over \$19 billion)

- Federal Building Energy Efficiency - \$4.5 billion
- Fossil Energy Research and Development - \$3.4 billion (degree of green depends on projects funded)
- Weatherization Assistance Program - \$5 billion
- National Science Foundation - \$3 billion (degree of green depends on projects funded)
- Science at the Department of Energy - \$2 billion, including \$400 million to Advanced Research Projects Agency-Energy (ARPA-E)
- National Oceanic and Atmospheric Association - \$830 million
- National Institute of Standards and Technology - \$580 million which includes the Technology Innovation Program

Energy Tax Credits and Funding

- Advanced Energy Investment Credit: Establishes a new manufacturing investment tax credit for investment in advanced energy facilities, such as facilities that manufacture components for the production of renewable energy, advanced battery technology, and other innovative next-generation green technologies.
- Tax credit for purchase of plug-in hybrid vehicles: up to \$7,500 per family.
- Long-term Extension and Modification of Renewable Energy Production Tax Credit: Includes a three-year extension of the production tax credit (PTC) for electricity derived from wind (through 2012) and for electricity derived from biomass, geothermal, hydropower, landfill gas, waste-to-energy, and marine facilities (through 2013).
- Temporary Election to Claim the Investment Tax Credit in Lieu of the Production Tax Credit: Facilities that produce electricity from wind, closed-loop biomass, open-loop biomass, geothermal, small irrigation, hydropower, landfill gas, waste-to-energy, and marine renewable facilities are eligible for a production tax credit. The bill would allow facilities to elect to claim the investment tax credit in lieu of the production tax credit.

Removal of Dollar Limitations on Certain Energy Credits: The bill would repeal the individual dollar caps. As a result, each of these properties would be eligible for an uncapped thirty percent (30%) credit.

- Clean Renewable Energy Bonds ("CREBs"): The bill authorizes an additional \$1.6 billion for new clean renewable energy bonds to finance facilities that generate electricity from the following resources: wind, closed-loop biomass, open-loop biomass, geothermal, small irrigation, hydropower, landfill gas, marine renewable, and trash combustion facilities.
- Qualified Energy Conservation Bonds: The bill authorizes an additional \$2.4 billion for qualified energy conservation bonds to finance State, municipal and tribal government programs and initiatives designed to reduce greenhouse gas emissions.
- Tax Credits for Energy-Efficient Improvements to Existing Homes: Promotes energy-efficient investments in homes by extending and expanding tax credits through 2010 for purchases such as new furnaces, energy-efficient windows and doors, or insulation.
- Transportation and Infrastructure Funding-The legislation will invest \$8.4 billion for investments in public transportation. State and local governments will be eligible for an additional \$1.5 billion in competitive grants for transportation investments. \$9.3 billion will be invested in Amtrak, High Speed and Intercity Rail. The American Recovery and Reinvestment Act will allow high-speed rail exempt facility bonds to be used to develop rail facilities that are used by trains that are capable of attaining speeds in excess of 150 miles per hour.

Hot spots to watch (according to one analysis)

- Green manufacturing: using traditional manufacturing methods and factories to create new parts for green industries. Advocates believe automobile plants can be retooled to build wind turbines, solar panels and other green products.
- The smart grid: a coordinated, national effort to modernize the electric grid so it delivers electricity using upgraded digital technology to save energy, reduce cost and increase reliability.
- Green chemistry: the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. Green chemistry is doing chemistry the way nature does chemistry.
- Sustainable agriculture: a way of farming that produces food indefinitely, without causing severe or irreversible damage.
- Sustainable/green retail: retrofitting existing retail businesses to accommodate shoppers' demands for more environmentally friendly products and services.

Online resources on the American Recovery and Reinvestment Act of 2009

Official government site:

Recovery.gov - www.recovery.gov

Independent sites:

Recovery.org - www.recovery.org

StimulusWatch.org - www.stimuluswatch.org

Also:

Stimulus Job Watch - http://hotjobs.yahoo.com/career-articles-stimulus_job_watch-794

Introduction to Carbon-Neutral and Cap-and-Trade

By Jim Cassio

Carbon-Neutral

Carbon-neutral refers to an individual or organization achieving net zero carbon emissions by balancing a measured amount of carbon released with an equivalent amount of carbon offset. Being carbon-neutral, or working toward that goal, is increasingly seen as an important measure of being environmentally responsible.

Why is this important? Because our excessive amounts of carbon emissions are a major factor in climate change. Thus a growing list of large corporations have announced dates for when they intend to become fully carbon-neutral. This includes Google, Yahoo, PepsiCo and Tesco, among others. Dell (the computer company) announced in August 2008 that they were carbon-neutral (although they were quickly slammed by an article in the Wall Street Journal for not counting *all* the emissions associated with their manufacturing and sales activities).

When an organization sets out to become carbon-neutral, it is usually achieved by combining the following three steps:

1. Limiting energy usage and emissions from transportation (walking, using bicycles or public transport, avoiding flying, using low energy vehicles), as well as from buildings, equipment and industrial processes
2. Obtaining electricity from a renewable energy source either by generating it directly (installing solar panels on the roof, for example) or by selecting an approved green energy provider, and by using low-carbon alternative fuels such as biofuels
3. Offsetting the remaining emissions that can't (for the moment) be avoided or generated from renewable energy in a responsible carbon project, or by buying carbon credits

Cap-and-Trade

Cap and trade, also known as *emissions trading*, is an administrative approach designed to control carbon emissions by providing economic incentives for reducing a company's carbon emissions. A central authority (typically a government or international body) sets a cap or limit on the amount of carbon emissions that can be emitted by companies in various industries. The companies are issued emission permits and are then required to hold an equivalent number of allowances (credits) which represent the right to emit a specific amount. For a given company, the total amount of credits cannot exceed their cap, limiting their total emissions to that level. Companies that need to increase their emission allowance will buy credits from others who pollute less. The transfer of allowances/credits is referred to as a trade - thus the *cap and trade* name. In effect, the buyer of the credit is paying a charge for polluting, while the seller is being rewarded for having reduced their emissions by more than was needed. In theory, those who can reduce their carbon emissions most cheaply will do so, achieving the most significant reduction of carbon emissions at the lowest possible cost to society.

Buying and selling carbon credits is already a new and emerging industry in the U.S. - with the potential to mushroom in size and scope if/when the U.S. implements a mandatory *cap and trade program*. President Obama has indicated that he wants such a program, and Congress is currently working on the legislation. It is a very controversial initiative, even though the approach has had success in a few other countries. But a mandatory cap and trade program is seen by many as the only way to ensure that American companies take significant steps to reduce their carbon emissions and, thus, fight climate change in a serious way.

To learn more about Cap and Trade: www.epa.gov/captrade/

Greening a Non-Green Employer

By Vicki Lind and Gail Nicholson

Employers are waking up to the green mission. Rather than search for a new employer (or until you find a new one), you may be able to go grow a green career “where you are planted.” Or you can seek a new employer who has recently become aware of the ethical imperative to make a contribution, and you may be the person who helps provide guidance and expertise during the seminal stages. This can roll at a dizzying pace or be very slow, as you first need to get oriented to the culture and people in the new organization.

If you’re considering investing your time and effort into greening a potentially non-green employer, you need to first find out if they can “walk the talk.” Have they allocated time and funds? Is there at least one champion with clout? Even if you think, “yes, the commitment is deep and genuine,” there is still a host of reasons that progress may seem slower than the movement of a glacier (a sadly outdated analogy). You and other employees may be too busy carrying out the duties that drive the company’s bottom line. You may have captured the ear of one crucial champion, but your “ear” gets transferred. Or, decision-making is centralized at a corporate office and your local site has limited autonomy.

One tactic for greening your current organization is to target positions within the organization that implicitly have more influence on purchasing or vendors. The following are some examples:

- Positions where you have the authority to purchase office supplies may allow you to introduce recycled paper
- Positions where you are in charge of landscapes might allow you to buy organic fertilizers
- Positions where you plan events may permit you to start composting waste

Green Teams

While you are earning the respect needed to garner influence, a great first step is to engage coworkers in starting a Green Team. These are groups of employees within a company or organization that meets periodically to discuss issues related to green and sustainable practices. Green Teams tend to focus on issues related either to daily in-house practices, or on how to incorporate more sustainable practices into their work. Examples of topics for daily activities include:

- Waste reduction - e.g. amount of paper used, recycling practices, purchasing practices
- Employee transportation - e.g. daily commuting, business trips
- Office environment - e.g. natural light, thermal comfort, connection to outdoors, nontoxic environment

Green Teams tend to be a relatively small group of employees, but the size of the Green Team depends on the size of the company and how many employees are interested in devoting their time to this effort.

Green Teams can grow out of informal discussion groups, usually scheduled during non-work time, to explore and educate yourself and others about sustainability, as well as to evaluate a more structured Green Team. Some Green Teams don’t have formal authority in the organization, but can still act as a catalyst for more formal initiatives. Groups without authority tend to fizzle out. You can keep them from fizzling out by making the meetings fun and by focusing on how you can go green and save the company money. Establish some metrics to track progress.

Green Teams thrive when they have management support in several ways: Management can support holding meetings during work hours, which bolsters attendance and signifies their support. The effectiveness of Green Teams is bolstered when management takes the time to honestly define and clarify which issues are open for consideration. Most importantly, management can provide a venue for green teams to present recommendations to someone who has the authority to implement change.

If you'd like to start a Green Team and don't know how to get started, or have one and would like more guidance, you can contact Eco-Coach (www.eco-coach.com) - an organization that provides workshops and webinars for Green Teams.

You might also consider looking at a book entitled *Sustainability 101: A Toolkit for Your Business* by Anca Novacovici and Jennifer Woofter. With nearly one hundred recommendations including detailed "how to" instructions and websites where you can go for more information, their book is a great resource for employees that want to see change in their organization.

Vicki Lind, MS, NCC - www.vlind.com

Gail Nicholson, MA, LPC - www.gailnicholson.com

Being a Green Entrepreneur

By Anca Novacovici

Eco-Coach, Inc. - www.eco-coach.com

So you are thinking about starting your own business in a 'green' arena? To many, the word 'entrepreneur' conjures up images of glamour and excitement. They see a picture of an energetic, forward-thinking individual with a big idea, one that is financed by venture capitalists and requires working long hours resulting in big monetary rewards a couple of years down the road. Being an entrepreneur in a 'green' field seems even more exciting - it's an opportunity to jump into a new sector, help shape it, and capture market share early on - it can feel like the Wild West when you look at how quickly this market segment is growing!

But not so fast! Make sure you think this through first and weigh the pros and cons. Though being in the 'green' sector sounds exciting, starting a 'green' business still requires many of the same skills that are required in starting a conventional business. Being an entrepreneur does require an idea that you believe in, and it will likely require long hours, but it need not require external funding and most of the time does not involve overnight success. Being a 'green' entrepreneur in particular means going into uncharted territory in many cases, and that the market can change from one year to the next, which means you must apply caution.

When I started Eco-Coach in 2006, there were not many environmental sustainability consulting companies, and though I knew there was a need for the services, the target market was unclear - small, medium and larger sized businesses required the services, but they were not clear on what they wanted or needed because the market was developing. As a result, we had to educate businesses on the benefits of going 'green' and help them determine what best would fit their needs. Today, it is a different market - most companies, at least in the DC market, are aware of the advantages of 'going green' and know the direction they would like to go in. This requires a different approach than three years ago, as well as a slightly different set of offerings.

Whether working in a 'green' or conventional industry, being an entrepreneur requires many of the same characteristics, such as:

1. **An idea:** A good one! Something that you believe in and that you have researched and proven feasible - if you're not sure, make sure to ask others with experience to take a look at it. I had many great 'green' ideas, many of which would not have been feasible at the time that I started my company because the market did not exist for them.
2. **Content knowledge:** It is important that you or someone on your team has in-depth knowledge of the product or service that you are about to launch, or is committed to becoming the 'expert' on it. Eco-Coach combines my skills in management consulting with my passion for the environment - many of the previous ideas I had were not in a field I was familiar with, which is another reason I did not undertake them.
3. **Risk tolerance:** The ability to tolerate a certain degree of risk is required; this is not to say, however, that you should take risks just for the sake of it - any risk, monetary or otherwise, must be calculated and a mitigation strategy should be developed to address that risk. I consider myself more risk-averse than other entrepreneurs whom I know, but I am still considered risk-tolerant by others, so you do not have to be a Richard Branson type but you still need to deal well with uncertainty.
4. **Flexibility:** Things will not always work out the way you want them to, so you will need to know how to adapt and move on. You may start out with a business concept and need to change it to adapt to market demand (this includes taking into account economic

conditions, customer demand, and competitor products). When we started out, we offered residential concierge services as part of our offerings for individuals; however, this is something that did not have high demand or a high return, so we decided to withdraw it from our offerings.

5. **Perseverance:** The willingness to do whatever it takes to succeed - this also takes motivation and discipline.
6. **Leadership skills:** You will need to make tough decisions along the way, and help others see your vision and move them towards that point - it will not always be easy to do! This also involves putting your ego aside and bringing people on board who have stronger skills and knowledge than you do in certain area.
7. **Support network:** This includes mentors, partners, significant others, and other successfully entrepreneurs - it is important to have others to bounce ideas off of and who support you in your endeavor. There are many great resources in the DC area, and I feel fortunate to have met many great individuals, both in and out of the 'green' sector, who have provided insight, guidance and support throughout.

Most of the traits described about can be developed, and to some degree, you may be able to choose the type of business you start based on the level of comfort you have with many of these. For instance, if you have a low risk tolerance and know that you are not too flexible, you can consider a franchise. If, on the other hand, you have a high risk tolerance and access to funding, you can start a business in a developing field, such as solar technology.

That being said, there are a few additional traits that the 'green' entrepreneur must have, though these are also important in other businesses:

8. **High ethical standards:** A company that provides 'green' products or services should practice what it preaches and follow the triple bottom line (people, planet, profits). It is sometimes easy to take short-cuts and/or use non-green products and practices. Although in the beginning, it may be necessary due to cost and resource considerations and in order to get the business off the ground (especially if you are working in your basement, which may not be as eco-friendly and energy efficient as you would like it to be!), in general it is important to incorporate these values into the company culture as early as possible.
9. **Analytical skills:** These are required for all entrepreneurs, but they are especially important in the 'green' sector, as this is a relatively new sector. This means that you must tread carefully - there is huge opportunity but there is also a higher risk for failure, because some concepts have yet to be tested out and proven. To lower your risk, be sure to look at many different scenarios and really think through the repercussions of each.
10. **Creativity:** As with the other two skills, these are important for any entrepreneur but are especially important in a new sector. Being a 'green' business and taking into account the triple bottom line is a great opportunity for re-thinking the way business is done, for taking responsibility for the impacts that the business has upstream and downstream, as well as internally.

You will hear many entrepreneurs say that if they knew at the beginning how much work they would have to do to run a successful business, they would have thought twice about doing it. That being said, the upside is that if you choose to start a 'green' company, you can make a living doing what you enjoy and help the planet in the process, so your time is well-spent in many different ways. I feel fortunate to do what I am doing and while there are also tough days, for the most part, I would recommend entrepreneurship to anyone who is in the mood for an adventure!

Informational Interviews

By Vicki Lind, Gail Nicholson, and Jim Cassio

Informational interviews are an integral part of the career exploration process. They allow you to access a new field and its key players. The answers you get can help you carve out a career path or target a resume to a desired job posting. That being said, keep in mind that this is not a starting point to career planning or a job search but is rather a way to refine which specific career field, industries and employers you will focus on. In this phase, it is not essential that the person you are interviewing has knowledge of direct job openings. However, a quality informational interview *may* lead you to job openings as your search becomes more focused.

Any new contact may be one degree of separation from the person who ends up hiring you. To identify individuals whom you would like to speak with, determine the field or fields that you are interested in, and identify individuals who you know in those fields. You can do this by asking your friends and family, as well as former employers and others whom you know through your personal and professional networks. Another great way of identifying potential interviewees is through online networks, such as LinkedIn. Although many LinkedIn contacts may not be local and the interviews therefore cannot be done face-to-face, they are still extremely viable resources for learning about a career field and/or industry that may be of interest to you.

Use the following guidelines to help you prepare and stimulate your thinking:

- Schedule the interview as either a face-to-face or phone interview.
- Determine which questions you would like to ask ahead of time based on the goal of the interview. For example, find out about a potential career path, learn about the skills required for a specific job, or obtain additional information about a training program.
- You are most likely to get an informational interview if you've been referred by a mutual friend, colleague, or friend of a friend. This is called a "warm" lead.
- When you make contact, let the person know that you value his/her time and that you will bring some specific questions with you. Ask if they would prefer to see the questions in advance. Preparing questions will help you shape the interview to meet your needs.
- Start by suggesting a 20-minute interview at their place of work, or offer to buy them a cup of coffee or tea at a place convenient for them. They will likely express a preference for one of those options.
- If someone says they do not have time for the 20 minute interview, ask if you can have 5 minutes now or later when it is more convenient for them. That gives you time to ask one question – the one you decide is the most important question for this interviewee. Also, if that person can't be of help, ask if they can suggest someone else you could contact.
- Generally, you'll want to bring a resume, or send it ahead if they prefer. Another option is to ask if you could send a resume as follow-up to the interview. This way you have a reason for a second contact and can adapt your resume to what you learned in the informational interview. Not all informational interviews, however, involve a resume. If you are simply trying to learn more about a career field or industry, it may be premature to ask them to review your resume.
- For various reasons, you will probably not get answers to all of your questions. The purpose of an informational interview is to gather information and build rapport. If the person would be a valuable addition to your network, the rapport may be the most important component of the interview.

- At the end of the interview, ask if there are others they would recommend you speak to. As long as you're interested in the career field or industry, try to make each interview lead you to another interview.

For a 20 minute interview, choose 4-5 of the questions listed below that you would truly like to have an answer to; the whole list is impractical as it would take over an hour. Find a balance between thoughtful planning and allowing time for spontaneous exchanges.

- Tell me about your career and how you became a _____? (Keep in mind that, if you're interviewing a supervisor or manager of the type of position you're interested in, they may or may not have actually worked in that position previously. Therefore, you may need to adjust this question.)
- What are some of the lessons that you learned - what would you repeat and what would you do differently?
- What education or training did you have when you entered this field, including any specific degrees or certifications? Is that typical? What skills, degrees or certifications are most likely to help someone advance in this field?
- Do you think that your organization is committed to sustainability? If so, in what ways?
- What are your organization's plans for sustainability in the future? Have time and money been allocated to carry them out?
- Tell me about your typical workday. What are your most favorite/least favorite parts of the day? How much time is spent on the computer? How much interacting with people? How much outside of the office?
- Where do you see this career field (or industry) going? Where is the most job growth expected? (e.g. generalists or specialists, types of employers, geographic areas, etc.)
- Are there some specialties areas within this field that I might explore?
- Are there any specialized skills or knowledge for which there is increasing demand?
- What are the entry-level, mid-level, and high-level salaries in this field?
- Are there any professional associations for this field that I should know about? Are there any local organizations with meetings that I might attend? Are there any trade or professional journals that you would recommend?
- May I contact you again if I have any additional questions or when I begin my job search?
- May I check back in with you in few weeks to see if any new positions have opened up?
- Now that you know a little more about me and my goals, what do think my next step should be?
- Is there anything else that I should be aware of during my search?

During the interview, take notes and listen carefully. Spend more time listening than talking – with the exception of answering any questions they have for you. In fact, to the degree possible, make the interview about the interviewee! Be sure that you ask follow-up questions and try to avoid repeating a question that they already answered.

Stick to the 20-minute interview time requested unless they clearly indicate they have more time available (don't assume they have more time just because they're being polite).

At the end of the interview, if there's any doubt, ask if you can follow-up with them in case you have any additional questions or need clarification.

Follow up right away with a thank-you note in a format that is consistent with the culture of the organization. For example, someone in a small, conservation-minded nonprofit might enjoy a handwritten note on a Sierra Club card; a person in a hip creative firm might prefer a witty e-mail. Hopefully, your follow-up thank-you note will be the first of many exchanges. Stay in touch and find ways to build on the connection. For example, from time to time, you may see an article that might be of interest to the interviewer. Send it to them with a brief note. You never know when someone who began as your informational interviewee may develop into a significant professional relationship for you, or even become your mentor.

Vicki Lind, MS, NCC - www.vlind.com

Gail Nicholson, MA, LPC - www.gailnicholson.com

A Strategic Plan for Your Career:

If you wouldn't start a business without a strategic plan, why run your career without one?

By Carleen MacKay
www.agelessinamerica.com

I am writing to you about **strategy**, not about flailing around until you are lucky enough to land any job in any company for no particular reason other than an unhealthy attachment to traditional job hunting tactics!

By strategy, I mean developing a cohesive response to the challenges you face. Your career is your business. Careers, like businesses, compete or fail based on strategy and execution. The strategic planning process I recommend is simple, direct, timely in changing economic times, and renewable as you move your business (career) forward.

For your easy reference, here's the What and Why of my eight-step strategic planning process:

Step #1 - the process of letting go. For some people, the process is easy. For others, letting go rips away the familiar fabric of their lives. For all, letting go takes coming to grips with the fact that the past is as much like the future as the modern jet is to the horse and buggy. It requires giving up longing for the unattainable and striking out in a new and, increasingly often, unfamiliar direction. For the few who drag the baggage of their past with them, they can count on the fact that they have set rejection in stone.

Step #2 - self-analysis. Yes, you may know who you are, but can you articulate both who you are and what you do in interesting, compelling and memorable terms? I doubt it if you are simply practicing the tired 60-second elevator pitch from days gone by when it was most likely that you were seeking a new job or career that bore an almost exact resemblance to your past work. Learn now to "brand" yourself clearly and concisely in terms of setting yourself apart from the crowd. (There are lots of great books on the subject of the art and skill of branding, as well as sites on the Internet.)

Step #3 - the study of the market as it is becoming and not as it once was! There is no trick to understanding just how important this step is to your future. You need to know where the jobs/careers are going to be - not where they once were. Another way of saying this is to say that you are at that moment in time when you must learn from the future and not from the past. Fully half of today's jobs bear little resemblance to past jobs and by 2015 it is estimated by the U.S. Department of Labor that 76% of U.S. jobs will demand specifically skilled employees. For example, green careers offer a wide variety of career options, ranging from scientists with graduate degrees to green collar workers such as solar and wind energy technicians and alternative fuel vehicle technicians. But the one thing green jobs have in common (besides being green) is that they each require a significant skill set. To acquire those skills requires a commitment to education and training. Your study of the market should not only tell you where the jobs are, but also where the jobs will be in the future and what skills and other qualifications employers will be looking for.

Step #4 - the purposeful linking of who you are with what the new job market demands. Think about it. It is only at Step #4 that you have fully prepared yourself to study the specific and particular organizations, businesses and industries that meet both the marketplace needs and your

needs. It is the alignment between the first three steps that suggests the course of action that will meet your values and needs in whatever life stage and economic realities apply to you.

Step #5 - suggests that you look beyond regular, full-time work into the many corridors of work that are opening up. Getting to where you are going is no longer a matter of one job at one company for one very long time. It is a matter of finding opportunity that meets need. Full-time, part-time or just-in-time, your career goals are your driver, **not** your time and tenure in one or two organizations.

Step #6 - ah, the missing link for so many. Knowing what you don't have to offer as an employee (especially in a buyer's market) is one-half of the battle. In business terms, this is labeled a gap analysis. More than half the jobs/careers that are emerging require different or expanded skills, certifications or competencies than those jobs from the past. Confirm what you are missing. Fill in the gaps by learning new skills **before** seeking rejection as an underqualified job applicant. There are countless ways to prepare to learn new skills in record time: virtually, in person, through extension schools, and in community colleges and extended study programs at your local university. If you can't "fill in the blanks" with demonstrable qualifications, you won't beat the competition in a "buyers' market." As part of your "gap analysis" think about how practiced you are at selling yourself and advancing opportunities. I'll bet that if you stop thinking about interviewing training, and consider sales training as part of your learning portfolio, you will gain confidence and improve results over your working lifetime. With people changing jobs as many as ten times before the age of 38 (Department of Labor stats), you need to know how to maneuver, advance and close many and various types of deals. Technique is learned, not inherent.

Step #7 - have you heard me mention a resume yet? Now is the time to write down your S.M.A.R.T. business plan. In other words, you need a plan that is specific, measurable, action-oriented, realistic and time-framed if you are to call it a **plan** rather than a wish-list. Now is the time to test your plan on respected colleagues. Now is the time to calibrate, refine and adjust your goals. Now is the time that your business (career) plan can be measured and adjusted as you go.

Step #8 - wait for it...wait for it! Here comes the resume and many more marketing tools. You need to understand and use multiple marketing tools and methodologies well beyond developing and posting a chronological resume to job boards. In point of fact, the lengthy chronological resume is the best screening-out tool ever invented for people whose careers span too few or too many years. Biographies, websites, social network postings... all have their place in your business plan and choosing which one to use and when to use it is both an art and a skill. Now you should understand why I positioned your marketing tools last in the planning process.

I have offered you the What and Why of strategic planning but, as for the **how** of creating your own plan, I offer two simple ideas:

1. You can look up business strategic planning models on the Internet and follow their suggested processes. You will soon see the similarity between the highlights of this plan and theirs.
2. Or you can order one of my books such as *Boom or Bust* which, while written for Baby Boomers (who seldom apply strategy to their own career planning), includes a thorough explanation of the 8-step strategy I recommend.

Older Workers: Use Age to Your Advantage

By Joe Turner

While it's true that not all employers will be gung-ho about hiring, or even retaining, older workers in the coming years, overall statistics may be on your side if you're 50 or older. As has been reported, the limited numbers of workers in the Gen-Y age group will not match the rising need for workers over the next 10 years. This means that employers will be faced to consider alternate labor sources, which include older workers. The plain fact is that older workers still have many advantages over younger colleagues. The following are some job-hunting tips:

Go on the Offensive

Too often, older workers feel they have to apologize for their years of actually working. Remind yourself that you're experienced, not old. You're seasoned, not over-the-hill. You're here-and-now, not history. It's all about spin and reframing, so drop the apologies. There are benefits to being older, like having wisdom and common sense, and a long work record of accomplishments that can be translated into benefits to the employer. In other words, sell your track record.

Sell Results, Not Years

Recognize that hiring managers today are looking for results, not years. Instead of citing 20-years of experience, identify benefits to the employer. Explain how your knowledge and experience has benefited present and previous employers. Moreover, be sure to put these benefits into monetary terms as much as possible. Money still talks, and especially in a recession - *money can trump age* (clearly good news for an older worker)!

Wear Just One Hat

You may have accumulated experience in a number of areas, but don't confuse the hiring manager with all the different roles and jobs performed over the years. *Focus only on the job title for which you're applying.* Magnify only the aspects of your background that are relevant to this particular job. Furthermore, if any duties and experiences don't directly address the job title's requirements, don't emphasize them. In fact, remove them from your résumé entirely, if possible, as it will only give employers another reason to screen you out.

Modify Your Résumé

Take a look at your résumé, and ask yourself: "*Would I hire myself for this position?*" Spin your story in your favor by reworking your résumé to emphasize your strengths. Make sure everything on it relates in some way to your desired job objective. Drop older job titles. You generally don't need to show more than 10 years' work history. Anything prior to that is most likely irrelevant, and will take the hiring manager off track. Likewise, remove dates of college degrees and other training that goes back more than a few years.

Summary

While there will be age discrimination with some employers, the deck can still be stacked in favor of the older worker. Focus on the employer's needs and draw from past successes to explain why you represent an excellent "return-on-investment." If you do this, you can find a great job regardless of the economy.

As a recruiter, Joe Turner has spent the past 15 years finding and placing top candidates in some of the best jobs of their careers. Author of "Job Search Secrets Unlocked" and "Paycheck 911", Joe offers free insider job search secrets at www.jobchangesecrets.com.

How Green is Recycling?

By Jim Cassio

There are two different types of industries where green jobs are found: *all-green industries*, like renewable energy, where virtually all employers and their jobs are green; and *mixed-green industries*, like construction, where some of the employers and their jobs are green. When experts suggest that recycling is an all-green industry filled with green jobs, I get uncomfortable. That's because recycling, as important as it is for sustainability, is not always as green as some people think.

Overview of the recycling industry (loosely borrowed from the U.S. EPA)

Recycling includes collecting recyclable materials; sorting and processing the recyclable material into raw materials; and manufacturing the raw materials into new products. Four primary collection methods for recyclable materials include curbside pickup, drop-off centers, buy-back centers and deposit/refund programs. Once collected, recyclable materials are sent to a recovery facility to be sorted and prepared into marketable commodities for manufacturing. Recyclables are bought and sold like any other commodity, and prices for the materials change and fluctuate with the market. Once cleaned and separated, the recyclable materials undergo the manufacturing process. Common household items that contain recycled materials include newspapers and paper towels; aluminum, plastic, and glass soft drink containers; steel cans; and plastic laundry detergent bottles. Recycled materials are also used in innovative applications such as recovered glass used in roadway asphalt (glassphalt) or recovered plastic used in carpeting, park benches, and pedestrian bridges.

The Three R's: Reduce, Reuse and Recycle

The first two R's - reduce and reuse - are by far the most environmentally responsible activities of the three. Those activities almost always result in less environmental impact and less carbon dioxide released to the atmosphere. (According to most scientists, it is our excessive carbon dioxide emissions that are causing climate change.) Recycling, in contrast, is generally better than adding to the landfills, but it doesn't automatically qualify as an environmentally responsible activity. Why? Because the material being recycled has a *life cycle* that must be considered before we know how sustainable it is in a world of limited natural resources and human induced climate change. For example, aluminum can be recycled an unlimited number of times, so that's good. But the aluminum recycling process still takes energy and that energy use contributes to our carbon dioxide emissions. So while it is better to recycle aluminum than to add it to the landfill, it is nevertheless much better to reduce the amount of aluminum you buy, and to buy *recycled* aluminum as opposed to *recyclable* aluminum (when you must buy it).

Did you know that recycling plastic is less eco-friendly than recycling aluminum? That's because plastic can only be recycled a limited number of times due to contamination problems in which the polymers get degraded. Another problem with recycling plastic is that we put a lot of plastics in our recycling bins that are non-recyclable, while the plastic recycling process is highly vulnerable to contamination by food, labels and mixing different

What about reusing plastic bottles?

That depends on whether you're talking about bottles designed to be reused or bottles designed for disposal. For plastic bottles designed to be reused, it is important to choose BPA and phthalate-free bottles. Or, better yet, choose aluminum or stainless steel water bottles as they can be reused indefinitely and can be easily recycled if/when they become damaged. For plastic bottles, reusing them a few times (if properly washed) is generally considered safe. Plastic #2, #4 and #5 bottles are generally considered the safest bottles to reuse. Note that most bottled water is made from plastic #1.

types of plastics. So does that mean we shouldn't even bother to recycle our plastics? Of course not, but it does mean that to be environmentally responsible, we need to reduce the amount of plastic we buy and buy only recyclable plastics (when we must buy it). See <http://earth911.com> for the details. Without better knowledge in our society about what plastics are and aren't recyclable and reusable, people get too comfortable with the idea that they can buy all the plastic bottles and containers they want as long as they throw them into the recycling container.

Additionally, as with aluminum, the plastic recycling process takes energy which contributes to our excessive carbon dioxide emissions. So again, recycling is better than adding to the landfills, but it isn't nearly as eco-friendly as reducing the amount of plastic we buy in the first place.

Paper is made largely from wood, which comes from trees, and paper makes up about one-third of the waste stream going to our landfills. So does recycling used paper and buying recycled paper save trees and help the environment? That is the promise that has been made to most of us in order to encourage us to 'go green' with paper recycling. And there is undoubtedly some truth to that promise. However, if one takes an objective look at the paper recycling process, it is not clear how environmentally responsible recycling paper actually is when you consider the product's entire life cycle. It may still be better than adding freely to the landfill, but there is no doubt that it is more environmentally responsible to reduce the amount of paper we use and to reuse paper whenever possible. From a green perspective, most things that can be viewed and stored on a computer do not (also) need to be printed. But, for various reasons, people and organizations continue to print paper unnecessarily. I suspect this is in part because we get too comfortable in the notion that we can always recycle it. Even if recycling paper is better than not recycling it, there is still the environmental impact of the paper recycling process to consider, including the energy requirements (which, again, contribute to our carbon dioxide emissions). So the most eco-friendly option is... to reduce and reuse.

Some recycling companies are green and some are not

This assertion is hard for some people to accept, so let me begin by acknowledging that most recycling companies take their environmental responsibilities seriously. They are good citizens. Others are just trying to eke out a profit in a competitive industry and don't feel any particular responsibility toward the environment. There are many stories in the news about what is probably a very small percentage of recycling companies that have illegally disposed of things such as CRT monitors that people assumed were being properly recycled. Other companies have made the news when they were charged with crimes or sued because they allegedly created serious health hazards. One example is a glass recycling company in Los Angeles that allegedly created a major health problem for its neighbors due to the "glass dust" that resulted from loading and moving broken glass. So the question is: Why would we assume that all recycling companies are green? Clearly, we shouldn't. Like most industries, some employers are green and some are not. Being a recycling company is not a guarantee of being green or environmentally responsible - even if their rhetoric suggests otherwise. How responsible a recycling company is should be based on their actions and not on their words.

So, how green is recycling?

Let me first acknowledge that there are green jobs in the recycling industry. However, it's not an all-green industry. I would suggest that recycling jobs are as green (or non-green) as are their employers. If a recycling business or organization consistently acts in an environmentally responsible way (i.e. are committed to sustainability), then you could consider any or all of their jobs to be green jobs. That includes recycling coordinators, sorters/material handlers, the staff that operates the recycling plant machinery and equipment, and all the other support staff jobs ranging from accountants to front desk receptionists.

About the Author

Jim Cassio is a career information and workforce development consultant. He has been commissioned to conduct hundreds of labor market studies and has published numerous research reports, career resource books and online directories.

Jim specializes in job, skills, occupation and industry research, as well as labor market analysis and resource product development.

Jim has designed and coordinated research and development projects for federal, state, and local agencies, including O*NET pilot projects.

Jim is a consultant to many workforce development boards and other public and private organizations with an interest in career and workforce information.

Jim's recent publications include:

- Career Pathways Handbook*
- Your Guide to the Top 100 Careers*
- Green Careers Resource Guide*
- Green Careers: Choosing Work for a Sustainable Future* (with co-author Alice Rush)

Please see www.cassio.com for more information about Jim and his services.

