Acknowledgments

Many people at Environmental Defense Fund and the Texas Workforce Commission have helped in the production of this report. Special thanks are due to Joe Indvik and Tim O’Connor with EDF; and Doug Ridge and Shannon Federoff with TWC.

This publication was made possible with the generous support of The Meadows Foundation, which assists the people and institutions of Texas to improve the quality and circumstances of life for themselves and future generations.

Environmental Defense Fund

Environmental Defense Fund is dedicated to protecting the environmental rights of all people, including the right to clean air, clean water, healthy food and flourishing ecosystems. Guided by science, we work to create practical solutions that win lasting political, economic and social support because they are nonpartisan, cost-effective and fair.

Texas Workforce Commission

The Texas Workforce Commission (TWC) reviewed this guidebook. The TWC is the state government agency charged with overseeing and providing workforce development services to employers and job seekers of Texas. It has established a local/state network dedicated to developing the workforce of Texas. The network comprises the statewide efforts of the Commission coupled with planning and service provision on a regional level by 28 local workforce boards. This network gives customers access to local workforce solutions and statewide services in a single location — Texas Workforce Centers.

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The complete report is available online at www.edf.org/TXgreenjobs.
Texas Green Jobs Guidebook

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An Introduction to the Texas Green Jobs Guidebook

In this challenging economy, Texans are looking for rewarding careers that can put them on the path toward financial stability. However, many are unfamiliar with the opportunities offered by the growing green economy. This Guidebook aims to provide people with a tool for joining or learning more about this burgeoning industry.

Texas is the number one producer of wind energy in the country, and also possesses resources for opportunities in other renewable and energy efficiency sectors. Our state is home to many clean energy and green technology companies. Many of the jobs profiled in this Guidebook are in traditional employment sectors, such as manufacturing, installation, fabrication and operations, but new opportunities for adding a green layer to these types of jobs are emerging. For example, electricians can use their skills to install solar photovoltaic panels and machinists can use their knowledge to manufacture wind turbine components. New opportunities also exist in both urban and rural settings within sectors such as green building, renewable energy, energy efficiency audits, power plant operations, facilities management, and farm and ranch management. These jobs pay workers living wages, grant them access to safe and healthy working conditions, and provide opportunities for advancement. Most of these careers, such as wind turbine installation and maintenance and energy audits, cannot be outsourced overseas. They provide an opportunity to build a strong, long-lasting foundation for Texas workers, now and into the future.

These jobs are available or will become available throughout the state of Texas. Some areas may specialize in a particular industry, such as wind energy in West Texas and solar energy in Austin, but opportunities abound in every region.

This Guidebook is designed to be a resource for job seekers, students, guidance counselors, career advisors, policy makers and anyone else interested in learning about the tremendous potential of the existing and growing green jobs marketplace in Texas. This Guidebook features an expansive listing of green jobs throughout the Texas economy that includes job descriptions, salary information, minimum education requirements, potential certifications, employer types, job market growth potential, and much more. This list is by no means comprehensive. The very nature of the clean energy economy is that it is dynamic, and new opportunities will continue to present themselves.

Information for these job profiles was primarily compiled from job search websites, organizational websites, industry contacts, the “Green Jobs Guidebook,” (California) authored by Environmental Defense Fund with the Ella Baker Center for Human Rights and “Careers for Colorado’s New Energy Economy,” authored by Environmental Defense Fund with the Colorado Governor’s Energy Office.
The Outlook for Green Jobs Improved in 2009

2009 marked a sea change in funding and attention to the clean energy economy and green jobs. In February 2009, President Barack Obama signed into law the American Recovery and Reinvestment Act of 2009 (ARRA), which includes $787 billion in loans, tax cuts, grants, contracts and other funding in order to facilitate:

- Creation of new jobs and preservation of existing ones;
- Economic growth and investment in long-term economic growth; and
- Unprecedented levels of accountability and transparency in government spending.

Included in the $787 billion is a $48 billion investment in job training and education, nearly $100 billion in funding for transportation and infrastructure, $20 billion in tax incentives for renewable energy, and more than $41 billion for energy-related programs. This legislation creates an unprecedented opportunity to lay the foundations for a clean energy economy and the creation of green jobs.

The ARRA funds have been disbursed to states, and Texas received $593,807,800 for energy and weatherization programs and additional funds for workforce training. The state of Texas designated $90 million for the Skills Development Fund, which can be used toward green job skills training. The table below indicates the breakout of ARRA funding for the green economy in Texas.

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Texas ARRA Funds for the Green Economy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STATE AGENCY/APPROPRIATION ITEM</strong></td>
<td><strong>AMOUNT</strong></td>
</tr>
<tr>
<td>Comptroller of Public Accounts (State Energy Conservation Office (SECO))</td>
<td></td>
</tr>
<tr>
<td>State Energy Program</td>
<td>$218,782,000</td>
</tr>
<tr>
<td>Energy Efficiency and Conservation Block Grant</td>
<td>$45,638,100</td>
</tr>
<tr>
<td>Energy Efficient Appliance Rebate Program</td>
<td>$23,341,000</td>
</tr>
<tr>
<td>Electricity Delivery and Energy Reliability, Research, Development and Analysis</td>
<td>$2,432,068</td>
</tr>
<tr>
<td>Texas Department of Housing and Community Affairs (TDHCA)</td>
<td></td>
</tr>
<tr>
<td>Weatherization Assistance Program</td>
<td>$326,975,732</td>
</tr>
</tbody>
</table>

For more information about ARRA and its appropriations to Texas, see the following websites:

http://www.recovery.gov
http://www.window.state.tx.us/recovery/
In addition to ARRA, several pieces of national legislation are being considered by Congress that could bolster Texas’ green jobs sector if passed.

The American Clean Energy and Security Act (H.R. 2454), which passed the U.S. House of Representatives in June 2009, contains four helpful provisions. First, it would allow the Secretary of Education to award “Clean Energy Curriculum Development Grants” to partnerships of high schools, technical schools, colleges, and experts from the community who wish to establish programs of study. These must focus on emerging careers in renewable energy, efficiency, and climate change. This provision would prioritize online learning and programs that focus on poorly performing, disabled, disadvantaged, or minority students. Second, the bill would increase funding for state-level energy efficiency and renewable energy worker training programs that target poor and disadvantaged individuals. Third, it would require the Secretary of Labor to establish an online information and resources clearinghouse to aid career and technical job training programs in the renewable energy sector. It would help address the challenges of changing technology and regional disparity in job training programs by facilitating collaboration to help programs remain effective and up-to-date. The clearinghouse would be publicly available online. Finally, the bill would require the Secretaries of Labor and Energy to create a Green Construction Careers demonstration project. This project would aim to promote green construction careers by identifying projects, such as a residential energy efficiency retrofit, and ensuring that contractors participate in apprenticeship and training programs for lower income people. At the publication of this Guidebook, the Senate companion to H.R. 2454 is awaiting debate in the U.S. Senate.

There are two more green jobs bills awaiting committee review in the Senate. The first (S. 1096) would establish the EnergyGrant Competitive Education Program. It would provide $300 million each year from 2010 through 2014 to be awarded, on a competitive basis, to consortiums of technical schools or colleges to “conduct research, extension, and education programs relating to the energy needs of the region.” This would include green jobs promotion and probably training programs. The second (S. 1097) would create a sustainable energy training program that would award money to community colleges for workforce training and education programs. Potential sectors include alternative energy, efficiency, conservation, recycling, and sustainable agriculture. Additional legislation for green jobs continues to be introduced, indicating the high level of importance this sector has to Congress.

A Note on Job Entries in the Guidebook

Job descriptions and salaries in this Guidebook should be viewed as guidelines. A job with the same description may have different titles in two different companies, or two completely different jobs may have similar or identical titles. Salaries also vary widely depending on employer, geographical location, experience, economic conditions, and other factors. Jobs selected for this guidebook aim to represent the breadth and depth of green jobs available now and in the coming years. Therefore, each job entry describes only the opportunities available in that field, not necessarily a specific position. Also, the entries may contain positions that are not currently hiring, but that illustrate the types of jobs available in an industry.

Finally, although each sector is divided into sections, e.g., Installation and Maintenance, that reflect the typical divisions of companies, skill sets and job types in a particular field, some jobs may involve activities that fall into two or more sections. The sections are to facilitate browsing, but should not be taken as a complete characterization of each sector.

The following system is used to determine experience level required:

- 0 years = Entry Level
- 1-3 years = Mid Level
- 4+ years = High Level
Index of Texas Green Jobs and Sector Profiles

Clean Energy
Develop, manufacture, install, maintain, manage, and market technologies that harness the energy of natural forces and distribute it to consumers while limiting pollution.

Solar Power
- Installation and maintenance
- Development, manufacturing, sales, and project management

Wind Power
- Installation and maintenance
- Business and project management
- Development and manufacturing

Geothermal Power
- Manufacturing and installation
- Engineering, maintenance, and management

Biogas
- Collection and processing

Biomass
- Collection and power plant operations

Hydrogen Power
- Plant installation, operations, and management

Hydroelectric Power
- Design, development, and manufacturing
- Installation, maintenance, and project management

Power Plant (general facility positions)
- Environmental, health and safety
- Clean Power
- Development, sales, and business operations
- Carbon Capture and Storage

Energy Demand Response

Green Building
Improve existing buildings and design and construct new buildings to maximize efficiency and reduce environmental impact.

Green Building Practices and Retrofits
- Project design, development, and engineering
- LEED

Green Building
- Project design and engineering
- Installation and operations
- Energy Efficiency Services

Transportation
Produce efficient vehicles, modify existing vehicles to be more environmentally friendly, design and support efficient systems of transportation, and produce cleaner alternative fuels to power the vehicle fleet.

Automotive
- Operations, vehicle production, manufacturing, and modification

Legislation recently passed by Congress requires the Secretaries of Labor and Energy to create a Green Construction Careers demonstration project. This project would aim to promote green construction careers by identifying projects, such as a residential energy efficiency retrofit, and ensuring that contractors participate in apprenticeship and training programs for lower income people.
Transportation Systems
• Efficient mass transit vehicle operations
• Transportation systems design
• Biofuel production
• Operation and management

Waste Management
Reduce the amount of waste generated by society, treat potentially harmful waste products, and recycle materials that can be used again.

Waste Treatment, Recycling, and Waste Reduction

Water Resources
Manage and conserve water resources, supply safe water to households and businesses, and ensure that wastewater is properly disposed.

Water Resource Management and Supply Wastewater Management

Conservation and Planning
Protect natural resources and reduce the negative environmental impacts of human development and business.

Soil Conservation and Forestry

Environmental Planning
Environmental Consulting, Corporate Responsibility, and Compliance

Environmental Research and Monitoring
Conduct research to understand the biological, geological, and climatic systems of the Earth and how they change.

Advocacy
Push for specific policies concerning the environment and natural resources.

Sector Information
Not all sectors in the index are covered here

Solar Power
Texas has considerable solar resource potential. It receives significant direct solar radiation, providing energy that can be harnessed by photovoltaic (PV) cells and turned directly into electricity or that can be used by solar-thermal plants to produce steam and drive electricity-producing turbines. West Texas has more than double the direct solar radiation of East Texas, so it is an excellent location for PV or for utility-scale concentrating solar power (CSP) technologies, which use large mirrors to focus the sun’s power.

The solar power industry is growing at a staggering rate, and much of that growth will take place in Texas. The Energy Information Administration projects that solar energy produced in the U.S. will grow significantly over the next 25 years. In 2005, the Texas Legislature set a goal of installing 10,000 megawatts of renewable energy by 2025, 500 of which must come from non-wind sources.
This all bodes well for those hoping to build a solar power career in Texas. For example, CSP plants create five times more long-term jobs and 10 times more construction jobs than a comparable natural gas plant, according to the National Renewable Energy Laboratory. There will be tremendous demand for employees in all areas of Texas’ solar industry in the coming decades.

Sources:
- http://www.seco.cpa.state.tx.us/re_solar.htm

Wind Power

Texas currently produces more wind power than any other state. As of 2009, it had almost 8000 megawatts of installed capacity, about 2.5 times the capacity of the second-place state, Iowa, according to the American Wind Energy Association.

The wind potential in Texas is so great that the State Legislature included a 500 megawatt non-wind goal within the renewable portfolio standard of 10,000 megawatts of renewable energy by 2025, predicting that otherwise wind would fulfill the entire goal. As the state works toward that goal and national policies shift in favor of renewable energy, the Texas wind industry will continue to grow.

Sources:
- http://www.seco.cpa.state.tx.us/re_wind.htm
- http://www.awea.org/newsroom/releases/10-20-09_awea_Q3_market_report.html

Geothermal Power

Geothermal power uses steam generated by the heat of the Earth to produce electricity. Significant potential exists for geothermal development in Texas. Parts of both East and West Texas have sufficiently hot underground water resources to allow for direct use geothermal, which uses geothermal reservoirs to heat homes and businesses and facilitate industrial processes. In addition, old oil and gas wells can provide access to high-temperature resources previously thought inaccessible. The Geothermal Laboratory at Southern Methodist University estimates that Texas could have 2,000 to 10,000 megawatts of geothermal generating capacity within 10 years by taking advantage of these wells. Texas will most likely intensify its use of this clean and renewable resource in the coming years.

Sources:
- http://www.seco.cpa.state.tx.us/re_geothermal.htm

Biomass/Biogas

Biomass is energy produced from wood, food crops, grasses, agricultural residue, manure and methane from landfills. Texas has significant forest and agriculture sectors, which means an abundance of biomass resources, primarily in East Texas and the Panhandle. Texas is home to several ethanol plants, and is the largest producer of biodiesel in the U.S. Biomass is also different from other renewable energy sources in that in addition to being used as an electricity source, about 10 percent of biomass is used for transportation fuels, although this number is slightly lower in Texas. In the state, the majority of biomass is used by the industries that create it—paper, chemical and food processing—to generate heat, electricity and steam used onsite.

Texas is taking the lead in biogas, having opened the nation’s first cellulose biogas plant in the U.S., in Leon County in East Texas in 2009. The plant will generate one megawatt of electricity, enough to power 400 homes year round. Based on expected revenue, this first project estimates it will create 137 jobs and 14 businesses in the surrounding area. Four new plants will begin construction in Central Texas in 2010, and 50 plants are expected to be
running within the next eight years, according to the U.S. Department of Agriculture. Texas’ extensive refining capacity and distribution infrastructure also means that as biofuels are developed nationally, the state is likely to become the center for refining and distributing those fuels.

**Sources:**
http://www.seco.cpa.state.tx.us/re_biomass.htm
http://postoakrcd.org/biohybridenergy/documents/
TexasMakingHistorywithCelluloseBiogasPlant.doc%20%5BCompatibility%20Mode%5D.pdf

**Hydrogen Power**

The use of hydrogen to generate energy is still in the developmental stage, limited to research and pilot projects. However, Texas will have several advantages as the hydrogen power industry develops in the next few decades. Texas is second only to California in total hydrogen production, and it is a major consumer of hydrogen for industrial processes. It has a hydrogen pipeline network, and the state’s energy sector has experience working with the material. Texas will continue to develop its lead in hydrogen power as the associated technologies move toward commercial viability.

**Sources:**
http://www.window.state.tx.us/specialrpt/energy/renewable/h2.php

**Hydroelectric Power**

Hydroelectric power, generated by damming a river and forcing it to flow through a turbine that produces electricity, constitutes less than 1% of Texas’ power generation. Existing and potential hydropower projects are mostly confined to Central and Eastern Texas. The state has 23 hydroelectric dams with a total generating capacity of only 673 megawatts, and it is unlikely that it will see a significant expansion of hydropower in the future. However, the industry will maintain a healthy need for employees to maintain and administer existing facilities and to develop more efficient hydroelectric technologies.

**Sources:**
http://www.window.state.tx.us/specialrpt/energy/renewable/hydro.php
Carbon Capture and Storage

Carbon capture and storage (or sequestration) (CCS) is a process by which carbon dioxide is captured from large point sources, such as fossil fuel power plants, natural gas processing or heavy industry—including cement, paper and pulp processing—and stored rather than emitted into the atmosphere. No large industrial-scale projects are currently located in Texas. However, in 2007, the Bureau of Economic Geology at the University of Texas received a 10-year, $38 million subcontract from the National Energy Technology Lab to conduct the first U.S.-based monitored, long-term project to study the feasibility of CCS. It is a research project of the Southeast Regional Carbon Sequestration Partnership (SECARB). The SECARB partnership will demonstrate CO2 injection rate and storage capacity in the Tuscaloosa-Woodbine geologic system that stretches from Texas to Florida. The region has a potential to store more than 200 billion tons of CO2, equal to about 33 years of U.S. emissions at the current level. Monitored injection began in 2008.

Furthermore, in 2009, Governor Rick Perry signed into law a bill that establishes a regulatory framework for CCS in Texas, a significant step in the advancement of the process and technology in the state.

Sources:
http://www.secarbon.org/

Green Building

Texas is a leader in green building, an industry that strives to reduce the energy use, water consumption, and environmental impact of our structures. Even in a down economy, green building has found a place with energy efficiency retrofits, and the buildings that are being built often utilize green building techniques. Green building in Texas is encouraged by both economic and political circumstances. Texans pay 56 percent more each year for electricity than the average American, so every kilowatt of energy conserved in Texas is 56 percent more valuable.

Austin is a state and national leader in green building, consistently ranking among the top 10 green production cities in the U.S. according to many compiled rankings. Its municipal electric utility, Austin Energy, has a robust and stringent green building program and was awarded the U.S. Environmental Protection Agency's Climate Protection Award in 2008. Furthermore, cities across the state have been establishing and implementing stricter building codes for energy conservation. Major metropolitan areas, such as Dallas, Houston and San Antonio have passed stringent energy conservation building code measures within the past year—with full implementation poised for the coming months and years. Austin, as part of the Pecan Street Project, is considering changing its building codes to accommodate residential plug-in hybrid vehicle charging stations. The State Energy Conservation Office (SECO) has also begun a rulemaking process to increase statewide building codes to the 2009 International Energy Conservation Code.

Sources:
http://www.seco.cpa.state.tx.us/consumers/
http://www.epa.gov/cppd/awards/complistofwinners.html

Transportation

With nearly 80,000 miles of highways and 50,000 bridges, the surface transportation network in Texas is one of the largest in the country. The metropolitan areas of the state continue to grow, putting more pressure on existing transportation infrastructure. Federal directives for states designed to reduce greenhouse gas emissions in the transportation sector present opportunities in the green economy, such as new techniques and materials used in highway maintenance.

Economic forces and increasing congestion have led to a growth in the development of public transportation opportunities around the state. The Dallas Area Rapid Transit (DART) system was the first light rail in the Southwestern U.S., beginning service in 1996.
plans extensive expansion of service over the next few years, including connections to the Dallas/Fort Worth International Airport. In 2004, Houston’s light rail system came online. The city began a 30-mile extension in 2008, which is expected to be completed by 2012. Austin is nearing completion of construction and testing of its commuter rail system, and it is expected to begin service in 2010. San Antonio’s VIA metro bus system plans to add bus rapid transit (BRT) to its service area by 2012. The success of both light rail and BRT depends on development around the stations for each mode of transit. These developments, called transit-oriented developments (TODs), present opportunities for green projects such as alternative energy production to power the development.

Also, 2010 will see the first Plug-in Electric Vehicles (PEVs) come to market. Growth in this field is anticipated to be substantial, but may take some time to develop. One of Austin’s Pecan Street Project goals in creating the “utility of the future” is the integration of PEVs in the city’s utility planning, including residential and municipal charging stations. Dallas and Houston are exploring PEVs for their city fleets and many local utilities have expressed support for wider PEV integration. While the market may take some time to grow, there will be increased demand for automotive maintenance workers who are familiar with the PEV engines as well as electric technicians who could maintain and repair charging stations.

**Sources:**
http://www.dot.state.tx.us/about_us/strategic_plan.htm
http://www.viainfo.net/BusService/BRT.aspx
http://www.pecanstreetproject.org/

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**Waste Management**

Waste management touches virtually every industry—municipal, sewage, organic compost and recyclable materials. More cities, especially those experiencing growth, realize the urgent need to address issues of waste management. In 2008, Austin began a single-stream recycling program, which was contracted to a firm in San Antonio for the near term. Houston has a neighborhood-based recycling program, but some major employers in the area, such as the medical center hospitals and clinics and Reliant Stadium and Minute Maid Park, have begun significant recycling programs. The City of Houston also has plans to extend its recycling program to a city-wide program in the next few years. Increased recycling, both through awareness and city, county or state directives, can lead to more employment opportunities in collecting, sorting and processing waste and recyclable materials.

**Sources:**
http://www.ci.austin.tx.us/sws/default.htm
http://www.houstontx.gov/solidwaste/recycling.html

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**Water Resources**

Texas is the fastest growing state in the U.S. and demands on our water system are at an all-time high. Coupled with growth are problems such as severe drought, which affected all or part of the state in 2008 and 2009. San Antonio has been the leader in the state in municipal water conservation—even as the city has increased its citizen base, its water use has remained relatively constant since the 1980s. In 2009, Mayor Phil Hardberger introduced Mission Verde, a “green” economic development plan that includes policies to further enhance water management and arborist conservation efforts and improve municipal wastewater recycling. Other cities are also looking into wastewater recycling as a solution, including dry areas in West Texas. In 2007, the City of Austin set a goal to reduce peak water demand by 10 percent over
10 years. Also, water conservation in the electricity sector is a critical component in Austin’s Pecan Street Project, which will begin demonstration projects of potential technologies in 2010.

Although cities use approximately one quarter of the water in Texas, irrigated agriculture consumes 60 percent and manufacturing 10 percent. As supplies become scarcer, increased conservation measures will be necessary. Another issue for water is increased water loss through leakage from old pipes, and many Texas cities have policies to perform water audits and replace old pipes in the coming years, based on the age of pipes.

Sources:
http://www.sanantonio.gov/oep/SustainabilityPlan.asp?res=1280&ver=true
http://www.ci.austin.tx.us/council/watercon.htm
http://www.texaswatermatters.org/conservation.htm

As water supplies become scarcer, increased conservation measures will be necessary. Another issue for water is increased water loss through leakage from old pipes, and many Texas cities have policies to perform water audits and replace old pipes in the coming years, based on the age of pipes.

Conservation and Planning

Environmental planning has become more common in city and urban planning projects and offices, in both the public and private sectors. As environmental protection has become both a powerful marketing tool for firms and an element of corporate responsibility, demand has increased for consultants who focus on limiting the greenhouse emissions of their employers. Regulation of carbon dioxide, being debated in the U.S. Senate and discussed at the U.S. Environmental Protection Agency, would set new limits on greenhouse emissions, leading to even more demand for consultants and planners to help companies comply with new regulations. Public and private sector job growth in environmental compliance and planning is expected to be significant.
Solar power installation and maintenance

**SOLAR AND PV INSTALLATION: ROOFER**

**Description:** Install solar systems on roof while making sure that it is air-tight and maintaining the structural integrity of the building.

**Salary:** $15 - $23/hour

**Minimum Education:** GED/High School Diploma

**Experience Needed:** Entry to Mid Level

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Electric System Install Technician
2. Solar Installation Electrician

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**SOLAR ELECTRIC SYSTEM INSTALLATION TECHNICIAN**

**Description:** Install and operate solar electrical systems.

**Salary:** $15 - $25/hour

**Minimum Education:** GED/High School Diploma

**Experience Needed:** Mid Level

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Installation Electrician

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**SOLAR COMMERCIAL INSTALLATION ENGINEER**

**Description:** Install solar panel systems on commercial structures. Work with blueprints and technical concerns in installation.

**Salary:** $31 - $50/hour

**Certification:** North American Board of Certified Energy Practitioners (NABCEP) Certified Solar PV Installer recommended

**Experience Needed:** High Level

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Residential Installation Engineer
2. Electrical Engineer

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**SOLAR ELECTRIC SYSTEM INSTALLATION TECHNICIAN**

**Description:** Install solar electric generating systems at commercial and residential customer sites. Hardwire the photovoltaic energy system to the power grid.

**Salary:** $17 - $31/hour

**Minimum Education:** GED/High School Diploma

**Certification:** North American Board of Certified Energy Practitioners (NABCEP) Certified Solar PV Installer

**Experience Needed:** Entry to Mid Level

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Electric System Install Technician
2. Solar Installation Electrician

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**SOLAR COMMERCIAL INSTALLATION ENGINEERING TECHNICIAN**

**Description:** Provides technical support and assistance to field technicians and engineers.

**Salary:** $21 - $31/hour

**Minimum Education:** Associate Degree or equivalent from Trade School or Apprenticeship

**Experience Needed:** Mid Level

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Commercial Installation Engineer
2. Solar Commercial Installation Electrician Foreman

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**SOLAR THERMAL SYSTEM INSTALLER**

**Description:** Work in the field installing residential and commercial solar thermal systems.

**Salary:** $35,000 - $50,000/year

**Minimum Education:** GED/High School Diploma

**Experience Needed:** Entry to Mid Level

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Electric System Installation Technician
### Solar power installation and maintenance, continued

#### Solar Field Service Technician
**Description:** Provide on-site maintenance for solar electric systems.

**Salary:** $60,000 - $80,000/year

**Minimum Education:** GED/High School Diploma

**Experience Needed:** High Level
At least 5 years technical experience performing on-site maintenance

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Electric System Installation Technician

#### Ice Technician (Instrumentation/Controls/Electrical Systems)
**Description:** Monitors and repairs the instrumentation, controls, and electrical systems in a utility scale power generating facility.

**Salary:** $16 - $22/hour

**Minimum Education:** GED/High School Diploma

**Experience Needed:** Mid Level
2-3 years experience with increasing responsibilities in troubleshooting and repair of plant instruments

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Installation Engineer

### Solar power development, manufacturing, sales, and project management

#### Solar Energy Systems Designer
**Description:** Design solar domestic hot water and space heating systems for new and existing structures, applying knowledge of energy requirements of structure, local climate conditions, solar technology and thermodynamics.

**Salary:** $40,000 - $70,000/year

**Education Requirements:** Technical School

**Experience Needed:** Mid to High Level

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Electric System Installation Technician

#### PV Solar Cell Designer
**Description:** Design concentrated photovoltaic solar cells for mass production.

**Salary:** $77,000 - $91,000/year

**Minimum Education:** Advanced degree in Electrical Engineering, Materials Science, Chemistry, Physics or related field

**Recommended College Coursework:** Engineering, Sciences, Renewable energies

**Experience Needed:** High Level
Minimum 5 years of industry experience; solar experience not required.

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Energy Systems Designer
2. Electrical Engineer
### Solar Fabrication Technician

**Description:** Fabricates and assembles metal solar collectors according to job order specifications, using machine shop tools and equipment.

**Salary:** $20,000 - $40,000/year

**Minimum Education:** GED/ HS diploma

**Experience Needed:** Entry Level

A combination of 3-6 months of directly related training and/or experience is typically required.

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Energy System Installer
2. Solar and PV installation: Roofer

### Solar Hot Water Manufacturing Technician

**Description:** Manufacture solar hot water heaters.

**Salary:** $22 - $27/hour

**Minimum Education:** Associate Degree in Electronics/Electrical Engineering, Material Science, Physics, Chemistry or related discipline, or equivalent training and work experience. Recommended College Coursework: Engineering, Sciences, Solar Technology

**Experience Needed:** Entry Level

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. PV Fabrication and Testing Technician
2. Solar Energy Systems Installer

### Solar Power Systems Engineer

**Description:** Drive the development and implementation of highly efficient grid-connected systems for Concentrated PV technologies.

**Salary:** $76,000 - $88,000/year

**Minimum Education:** Master’s Degree in Electric Power Engineering or Energy Efficiency; or Bachelor's Degree with strong work experience. Recommended College Coursework: Electrical Engineering, Renewable energy, and Physics

**Experience Needed:** High Level

3-8 years experience including large-scale grid interconnect systems experience.

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Systems Designer
2. Photovoltaic Engineer
3. Energy Engineer

### PV Fabrication & Testing Technician

**Description:** Fabricate and test flexible, translucent plastic solar cells.

**Salary:** $22 - $27/hour

**Minimum Education:** Associate Degree in Electronics/Electrical Engineering, Material Science, Physics, Chemistry or related discipline, or equivalent training and work experience. Recommended College Coursework: Electronics, Electrical Engineering, Chemistry, Solar, Physics, Material Science

**Experience Needed:** Entry Level

2 years work experience in a laboratory environment is highly desirable

**Employer Type:** Private consulting, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Lab Technician
2. Solar Energy Systems Designer

### Solar Hot Water Manufacturing Technician

**Description:** Manufacture solar hot water heaters.

**Salary:** $22 - $27/hour

**Minimum Education:** Associate Degree in Electronics/Electrical Engineering, Material Science, Physics, Chemistry or related discipline, or equivalent training and work experience. Recommended College Coursework: Engineering, Sciences, Solar Technology

**Experience Needed:** Entry Level

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. PV Fabrication and Testing Technician
2. Solar Energy Systems Installer

### Solar Laboratory Technician

**Description:** Design concentrated photovoltaic solar cells for mass production.

**Salary:** $77,000 - $91,000/year

**Minimum Education:** Advanced degree in Electrical Engineering, Materials Science, Chemistry, Physics or related field

**Recommended College Coursework:** Engineering, Sciences, Renewable energies

**Experience Needed:** High Level

Minimum 5 years of industry experience; solar experience not required.

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Energy Systems Designer
2. Electrical Engineer
## SOLAR THERMOELECTRIC PLANT MANAGER

**Description:** Manage an entire thermoelectric plant.

**Salary:** $74,000 - $88,000/year

**Minimum Education:** Trade School, Apprenticeship or Bachelor's Degree

**Recommended College Coursework:** Electrical, Electronic, and/or Energy Engineering

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** Mid to High Level

- Minimum 2 years working experience; familiarity with thermoelectric technology as well as the solar energy market

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Solar Operations Engineer

---

## LEAD PV INSTALLER

**Description:** Lead installation teams, commissioning, and trouble shooting on residential and commercial install systems, with some indoor office planning.

**Salary:** $15 - $25/hour

**Minimum Education:** GED/High School Diploma

**Certification:** North American Board of Certified Energy Practitioners (NABCEP) Certified Solar PV Installer

**Experience Needed:** Mid to High Level

- Construction experience and electrical knowledge

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Cell Device Technician
2. Electrician

---

## SOLAR OPERATIONS ENGINEER

**Description:** Work with integration partners to design solar facilities and provide expertise on solar technology and innovation.

**Salary:** $90,000 - $100,000/year

**Minimum Education:** GED/High School Diploma; Bachelor's Degree in Electrical Engineering preferred

**Recommended College Coursework:** Electrical Engineering, Solar Operations

**Certification:** Professional Engineer (P.E.) NABCEP certificate and/or Electrical Contractors licenses preferred

**Experience Needed:** High Level

- Have experience designing and building PV electrical generation systems

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar PV Designer

---

## SOLAR ENERGY ENGINEER

**Description:** Perform site-specific engineering analysis and evaluation of energy efficiency and solar projects involving residential, commercial and industrial customers by utilizing building simulation software.

**Salary:** $75,000 - $80,000/year

**Minimum Education:** Bachelor’s Degree in an engineering discipline; Master's Degree preferred

**Recommended College Coursework:** Engineering, Physics

**Certification:** Professional Engineer, Engineer-In-Training, and/or Certified Energy Manager (CEM) are desired

**Experience Needed:** High Level

- 3-10 years related experience/training
- 3-5 years of facility-related engineering experience
- 2-5 years of experience within the green building, energy efficiency, building science or related field

**Employer Type:** Private Firms

**Related Careers:**
1. Electrical Engineer

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## RESIDENTIAL/COMMERCIAL SOLAR SALES CONSULTANT

**Description:** Establish sales plans, prepare proposals and close client deals.

**Salary:** $45,000 - $85,000/year, depending on commission

**Minimum Education:** Bachelor's Degree

**Experience Needed:** Mid to High Level

- 2-5 years experience in commercial and/or in-home sales

**Employer Type:** Private firms

**Related Careers:**
1. Energy Conservation Representative

---

## SOLAR ENERGY ENGINEER

**Description:** Perform site-specific engineering analysis and evaluation of energy efficiency and solar projects involving residential, commercial and industrial customers by utilizing building simulation software.

**Salary:** $75,000 - $80,000/year

**Minimum Education:** Bachelor’s Degree in an engineering discipline; Master's Degree preferred

**Recommended College Coursework:** Engineering, Physics

**Certification:** Professional Engineer, Engineer-In-Training, and/or Certified Energy Manager (CEM) are desired

**Experience Needed:** High Level

- 3-10 years related experience/training
- 3-5 years of facility-related engineering experience
- 2-5 years of experience within the green building, energy efficiency, building science or related field

**Employer Type:** Private Firms

**Related Careers:**
1. Electrical Engineer

---

## LEAD PV INSTALLER

**Description:** Lead installation teams, commissioning, and trouble shooting on residential and commercial install systems, with some indoor office planning.

**Salary:** $15 - $25/hour

**Minimum Education:** GED/High School Diploma

**Certification:** North American Board of Certified Energy Practitioners (NABCEP) Certified Solar PV Installer

**Experience Needed:** Mid to High Level

- Construction experience and electrical knowledge

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Cell Device Technician
2. Electrician

---

## SOLAR OPERATIONS ENGINEER

**Description:** Work with integration partners to design solar facilities and provide expertise on solar technology and innovation.

**Salary:** $90,000 - $100,000/year

**Minimum Education:** GED/High School Diploma; Bachelor's Degree in Electrical Engineering preferred

**Recommended College Coursework:** Electrical Engineering, Solar Operations

**Certification:** Professional Engineer (P.E.) NABCEP certificate and/or Electrical Contractors licenses preferred

**Experience Needed:** High Level

- Have experience designing and building PV electrical generation systems

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar PV Designer
### Wind Power Installation and Maintenance

#### Wind Generating Installer

**Description:** Assemble, install, and maintain electrical and mechanical parts, such as alternators, generators, and rotors of electric power generating windmills, according to production specifications.

**Salary:** $14 - $20/hour

**Minimum Education:** HS Diploma/GED

**Experience Needed:** Entry to Mid Level

A combination of more than 4 years of directly related training and/or experience is typically required.

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Electro-Mechanical Wind Turbine Technician
2. Wind Field Technician

#### Junior Renewable Energy Technician

**Description:** Perform wind turbine resets and site callouts and act as a central safety call-in for project managers performing high voltage switching, while receiving on-site training.

**Salary:** $15 - $17/hour

**Minimum Education:** HS Diploma/GED

**Salary:** $15 - $17/hour

**Recommended College Coursework:** Electro-Mechanical Wind Power Generation

**Experience Needed:** Entry Level

Previous operations experience of wind plants or currently attending school for this particular field

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Wind Field Technician
2. Electro-Mechanical Wind Turbine Technician

### Quality Assurance: Steel Works and Welding

**Description:** Coordinate the operations of a welding inspector crew and help develop welding process specifications.

**Salary:** $35,000 - $65,000/year

**Minimum Education:** GED/High School Diploma

**Certification:** Certified Welding Inspector (CWI) preferred

**Experience Needed:** Mid to High Level

3-5 years, preferably with experience in quality management

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Welder

### Quality Assurance: Surface Treatment and Final Assembly

**Description:** Develop specifications and procedures for painting wind turbines. Also responsible for quality records, monitoring and measuring devices on wind turbines, and customer relationships.

**Salary:** $35,000 - $65,000/year

**Minimum Education:** None

**Certification:** NACE (National Association of Corrosion Engineers) certification (recommended)

**Experience Needed:** Mid to High Level

3-5 years, preferably with experience in quality management

**Employer Type:** Private Firms, Power Plant/Facilities

### Welding Engineer

**Description:** Coordinate crews of welders and welding inspectors working on wind turbines. Develop welding process specifications, troubleshoot welding processes, and communicate with customer.

**Salary:** $65,000 - $80,000/year

**Minimum Education:** Bachelor's Degree

**Certification:** Certified Welding Engineer (CWI)

**Experience Needed:** Mid Level

1-2 years, with experience in quality management preferred

**Employer Type:** Private Firms, Power Plants/Facilities

### Wind Farm Operations Maintenance

**Description:** Work with power delivery operations and maintenance

**Salary:** $55,000 - $58,000/year

**Minimum Education:** Associate Degree

**Experience Needed:** Mid to High Level

3 years experience in power generation and electric systems, with at least one year in wind energy

**Employer Type:** Private firms, Government, Power Plants/Facilities

**Related Careers:**
1. Wind energy project developer
2. Wind energy project manager
### Wind Field Service Technician

**Description:** Perform status checks on turbines and repair the problems.

**Salary:** $22 - $26/hour

**Minimum Education:** Trade School or Apprenticeship

**Recommended College Coursework:** Iron and/or Metal Shop, Mechanical/Electrical Engineering, Renewable Energy Studies

**Experience Needed:** Mid Level

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Electro-Mechanical Wind Turbine Technician

### Wind Power Plant Project Engineer

**Description:** Responsible for overseeing all aspects of the technical specialties at plants including electrical engineering, turbine selection & procurement, revenue generation, expense management and budgets, as well as conducting conceptual engineering and design of wind field processes and facilities.

**Salary:** $60,000 - $90,000/year

**Minimum Education:** Bachelor's Degree in Mechanical or Electrical Engineering.

**Recommended College Coursework:** Mechanical and/or Electrical Engineering, Renewable Energies

**Experience Needed:** High Level

5-10 years of experience with power plant design, maintenance, and operations

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Director of Wind Development

### Wind Power Plant Project Developer

**Description:** Manage the development of wind energy projects.

**Salary:** $120,000 - $140,000/year

**Minimum Education:** Bachelor's Degree in Business, Engineering, Science, or a related field

**Experience needed:** Mid to High Level

3-15 years in energy industry

**Employer Type:** Private firms, Power Plants/Facilities

**Related Careers:**
1. Wind Project Site Manager
2. Wind Energy Supply Chain Management

### Transmission Associate

**Description:** Ensure adequate transmission for the company's development pipeline, including understanding the implications of congestion on potential and existing projects. Track the policies that impact transmission costs and availability in all US markets.

**Salary:** $60,000 - $80,000/year

**Minimum Education:** Bachelor's Degree; Degree in Engineering preferred, Economics or Finance considered

**Experience Needed:** Mid Level

1-3 years in energy industry, preferably transmission

**Employer Type:** Private Firms, Power Plants/Facilities
## Wind power project management and business, continued

### DIRECTOR OF WIND DEVELOPMENT

**Description:** Lead and manage the development and evaluation of potential wind energy business opportunities, identify and analyze wind energy investment opportunities and lead projects through the research, analysis, modeling, recommendation and negotiating phases.

**Salary:** $130,000 - $170,000/year

**Minimum Education:** Bachelor’s Degree in Accounting, Finance, Economics, or related field; MBA, CPA, CMA recommended

**Recommended College Coursework:** Finance, Economics, Accounting, and Management

**Experience Needed:** High Level  
4-6 years wind developer experience with large company or consulting firm.

**Employer Type:** Private Firms, Power Plants/Facilities

### WIND FIELD OPERATIONS MANAGER FOR COMMERCIAL

**Description:** Manage execution of all site activities in region - receiving, installation & commissioning, maintain expertise in field Environmental Health & Safety and quality procedures and drive project requirements in region including cost, schedule and performance.

**Salary:** $24 - $28/hour

**Minimum Education:** Bachelor’s Degree

**Recommended College Coursework:** Renewable Energies, Engineering, Industrial Operations

**Experience Needed:** Mid to High Level  
Minimum 3 years in field management of wind farms plus 1-2 years direct technical experience on wind farms

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**  
1. Plant Operations Manager

### WIND PROJECT SITE MANAGER

**Description:** Provide day to day successful operations management of a single wind farm.

**Salary:** $70,000 - $110,000/year

**Minimum Education:** Bachelor’s Degree in related field or equivalent combination of education and experience.

**Experience Needed:** High Level  
At least 5 years experience in industrial wind farm site management

**Employer Type:** Private firms, Government, Power Plants/Facilities

### PERFORMANCE ENGINEER

**Description:** Provide monthly reporting on wind farm relative to climatic indicators. Assist Asset Management in performing gap analyses to identify inefficiencies. Propose and execute R&D activities that will challenge or verify current modeling assumptions.

**Salary:** $60,000 - $90,000/year

**Minimum Education:** Master’s Degree in applied science, preferably Engineering

**Experience Needed:** Mid to High Level  
1-5 years in wind farm operational analysis

**Employer Type:** Private firms, Power Plants/Facilities

### RENEWABLES ACCOUNT REPRESENTATIVE

**Description:** Travel frequently to sell wind generator repair, retrofit, testing, and training services.

**Salary:** $50,000 - $75,000/year, depending on commission

**Minimum Education:** Associate’s Degree

**Experience Needed:** Mid Level  
2-3 years experience with knowledge of wind collection systems and electrical distribution equipment

**Employer Type:** Private Firms
## Wind power project management and business, continued

### WIND POWER FORECASTER/WIND RESOURCE ASSESSOR

**Description:** Offer wind power forecasting services to energy traders, regulators, wind farm owners and developers, and utilities and electrical grid operators.

**Salary:** $40,000 - $60,000/year

**Minimum Education:** Mid Level. Bachelor's Degree in Meteorology or Atmospheric Science

**Experience Needed:** 3 years related forecasting experience, preferably in wind energy

**Employer Type:** Private Firms

### WIND TURBINE MACHINIST

**Description:** Make precision metal or plastic parts, use computer numerically controlled machine tools, and set up and operate all of the basic machine tools and many specialized variations for wind turbine production.

**Salary:** $12 - $21/hour

**Minimum Education:** Apprenticeship or Trade School

**Recommended College Coursework:** Metalworking, Drafting, Math, and Computer courses

**Experience Needed:** Entry to Mid Level

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Welder
2. Sheet Metal Worker

### WIND TURBINE SHEET METAL WORKER

**Description:** Perform all operations necessary to make, install and repair a wide variety of sheet-metal products related to wind turbine production.

**Salary:** $14 - $22/hour

**Minimum Education:** Apprenticeship or Trade School

**Recommended College Coursework:** Math, Mechanical Drawing, Metal Shop, Welding, Heating and Air-Conditioning

**Experience Needed:** Entry to Mid Level

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Machinist
2. Welder

### WIND FARM ELECTRICAL SYSTEMS DESIGNER

**Description:** Design underground and overhead wind farm collector systems and prepare and develop site specifications.

**Salary:** $50,000 - $80,000/year

**Minimum Education:** Bachelor's Degree

**Recommended College Coursework:** Electrical Systems, Wind Turbine Design

**Experience Needed:** High Level

Minimum 5 years experience including wind farm collector systems and/or electric utility distribution

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Electrical Engineer

### CIVIL ENGINEER, WIND ENERGY

**Description:** Provide civil design, engineering, testing requirements, permitting and construction support for wind projects.

**Salary:** $45,000 - $70,000/year

**Minimum Education:** Bachelor's Degree in Civil Engineering

**Experience Needed:** High Level

At least 7 years experience in design, and engineering

**Employer Type:** Private firms, Government, Power Plants/Facilities
### Wind Turbine Mechanical Engineer
**Description:** Responsible for design, development, testing of all aspects of mechanical components, equipment and machinery.

**Salary:** $90,000/year or more

**Minimum Education:** Bachelor’s Degree in Mechanical Engineering

**Recommended College Coursework:** Mechanical Engineering, Metal Shop, Machining

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level
5 years with similar responsibilities

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Energy Engineer

### Wind Turbine Electrical Engineer
**Description:** Responsible for design, development and testing of all aspects of electrical components and equipment.

**Salary:** $90,000/year or more

**Minimum Education:** Bachelor’s Degree in Electrical Engineering

**Recommended College Coursework:** Electrical Engineering, Renewable Energies

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level
5 years with similar responsibilities

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Energy Engineer
2. Geothermal Electrical Engineer

### GEOTHERMAL PLANT INSTALLATION TECHNICIAN
**Description:** Install infrastructure at geothermal power generation plants.

**Salary:** $35,000 - $45,000/year

**Minimum Education:** GED/High School Diploma

**Experience Needed:** Entry Level
Experience in construction, refrigeration, electrical and/or plumbing installations

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Systems Service Technician

### GEOTHERMAL HEAT PUMP MACHINIST
**Description:** Make precision metal or plastic parts for geothermal heat pumps, use computer numerically controlled machine tools, and set up and operate all of the basic machine tools and many specialized variations.

**Salary:** $12 - $21/hour

**Recommended College Coursework:** Metalworking, Drafting, Math, and Computer courses

**Experience Needed:** Entry to Mid Level
Journey level status

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Welder
2. Sheet Metal Worker

### Geothermal Power Plant Manufacturing and Installation

### GEOTHERMAL SHEET METAL WORKER
**Description:** Perform all operations necessary to make, install, and repair geothermal power generators.

**Salary:** $14 - $22/hour

**Minimum Education:** Apprenticeship or Trade School

**Recommended College Coursework:** Math, Mechanical Drawing, Metal shop, Welding, Heating and Air-Conditioning

**Experience Needed:** Entry to Mid Level
Journey level status

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Machinist
2. Welder

### GEOTHERMAL POWER PLANT STRUCTURAL ENGINEER
**Description:** Design the geothermal power generating structure.

**Salary:** $67,000 - $79,000/year

**Minimum Education:** Bachelor’s Degree in Civil Engineering

**Recommended College Coursework:** Structural Engineering, Mechanical Systems, Geothermal

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level
5-15 years of facility and industrial system design with 5 years of power plant design

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Civil Engineer
Geothermal power plant engineering, maintenance, and management

**Texas Green Jobs Guidebook**

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**GEOTHERMAL ELECTRICAL ENGINEER**

**Description:** Responsible for design, development and testing of all aspects of electrical components and equipment.

**Salary:** $90,000/year or more

**Minimum Education:** Bachelor's Degree in Electrical Engineering

**Recommended College Coursework:** Electrical Engineering, Renewable Energies, Geology

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level

5 years with similar responsibilities

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Energy Engineer
2. Solar Energy Engineer

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**HYDROGEOLOGIST**

**Description:** Conduct field-related activities connected to the groundwater monitoring duties. Collect water level measurements and water quality samples from production wells and monitoring wells.

**Salary:** $58,500 - $78,200/year

**Minimum Education:** Bachelor's Degree in Geology, Hydrogeology, Earth Science, or related field

**Recommended College Coursework:** Hydrogeology, Earth Sciences

**Experience Needed:** Entry Level

Some experience in groundwater sampling activities and hydrogeologic data presentation is a plus

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Water Purification Systems Service Technician

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**GEOTHERMAL ELECTRICAL ENGINEER**

**Description:** Design, develop and test all aspects of electrical components and equipment.

**Salary:** $90,000/year or more

**Minimum Education:** Bachelor's Degree in Electrical Engineering

**Recommended College Coursework:** Electrical Engineering, Geothermal Technology

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level

5 years with similar responsibilities

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Energy Engineer
2. Solar Energy Engineer

---

**GEOTHERMAL OPERATIONS ENGINEER**

**Description:** Collect and process information on well-field and plant performance. Diagnose well problems and designs procedures to fix them.

**Salary:** $70,000 - $80,000/year

**Minimum Education:** Bachelor's Degree or higher in Engineering

**Recommended College Coursework:** Resource/ Petroleum Engineering, Computer Programming

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level

15 years experience in geothermal resource engineering as well as petroleum engineering

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Mechanical Engineer

---

**GEOTHERMAL POWER GENERATION (MECHANICAL) ENGINEER**

**Description:** Prepare specifications, performance modeling and analysis, cost estimations, and negotiation of supply and service contracts for a company that generates renewable electric power.

**Salary:** $90,000 - $140,000/year

**Minimum Education:** Bachelor's Degree in Mechanical Engineering

**Recommended College Coursework:** Mechanical Engineering, Renewable Energies

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level

5 years experience with boilers and steam turbines, vessels, piping, valves, control systems, equipment and piping supports systems

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Geothermal Electrical Engineer
Geothermal power plant engineering, maintenance, and management, continued

**GEOTHERMAL MECHANICAL ENGINEER**

**Description:** Design, develop and test all aspects of mechanical components, equipment and machinery.

**Salary:** $90,000/year or more

**Minimum Education:** Bachelor’s Degree in Mechanical Engineering

**Recommended College Coursework:** Mechanical Engineering, Earth Sciences, Geothermal production

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level
5 years with similar responsibilities

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Electrical Engineer
2. Energy Engineer

**GEOTHERMAL PLANT EFFICIENCY OPERATOR**

**Description:** Maintain and monitor plant equipment for efficient and safe plant operations and planning and handling all hazardous materials and wastes in a safe and environmentally sensitive manner.

**Salary:** $26 - $30/hour

**Minimum Education:** GED/High School Diploma

**Certification:** Hazardous Materials (HAZMAT)

**Experience Needed:** High Level
Minimum 5 years of power plant operating experience

**Employer Type:** Government, Power Plants/Facilities

**Related Careers:**
1. Weatherization Operations Manager

Biogas collection and processing

**LANDFILL GAS TECHNICIAN**

**Description:** Assist head landfill operator in daily operations, maintenance and repair and performing landfill gas leak checks on recurring basis.

**Salary:** $10 - $15/hour

**Minimum Education:** GED/High School Diploma

**Experience Needed:** Entry Level

**Employer Type:** Landfill Facilities, Consultants

**Related Careers:**
1. Landfill Gas Collection System Operator

**LANDFILL GAS COLLECTION SYSTEM OPERATOR**

**Description:** Responsible for daily operations, maintenance and repair and extracting landfill gas in a proper, safe, reliable and efficient manner.

**Salary:** $20 - $24/hour

**Minimum Education:** Trade School, Apprenticeship or Associate’s Degree

**Recommended College Coursework:** Power Generation Operation, Landfill Gas Plant Operations, Chemistry

**Experience Needed:** Mid Level
Minimum 3 years of equipment operations experience using mechanical, electrical, instrument or control system skills

**Employer Type:** Landfill Facilities, Consultants

**Related Careers:**
1. Landfill Gas Technician

**LANDFILL GAS TO ENERGY (LGE) PLANT INSTALLATION, OPERATIONS, ENGINEERING AND MANAGEMENT**

**Description:** Design, construct, operate and/or maintain system that delivers landfill gas to energy facilities to produce useable fuel for vehicles.

**Salary:** Expected to be similar to operations, engineering and maintenance personnel at other facilities

**Minimum Education:** Bachelor’s degree or higher in Engineering

**Recommended College Coursework:** Resource/ Petroleum Engineering, Computer Programming

**Certification:** Dependent on position sought

**Experience Needed:** High Level

**Employer Type:** Private Firm, Government, Power Plants/Facilities

**Related Careers:**
1. Weatherization Operations Manager
### Biomass Collection and Power Plant Operations

#### Biomass Collection, Separation & Sorting

**Description:** Collect, haul, sort and process biomass waste for distribution to biomass facilities.

**Salary:** Approx. $9 - $14/hour (similar to other waste haulers)

**Minimum Education:** GED/High School Diploma

**Recommended College Coursework:** Resource/Engineering, Computer Programming

**Experience Needed:** Entry Level

**Certification:** Commercial Drivers license

**Employer Type:** Private Firms, Government, Power Plants/Facilities

#### Animal Waste Biogas Collection System Technician

**Description:** Responsible for daily operations, maintenance and repair of biogas equipment at animal waste operations.

**Salary:** $20 - $24/hour

**Minimum Education:** Trade School, Apprenticeship, or Associate’s Degree

**Recommended College Coursework:** Power Generation Operation, Landfill Gas Plant Operations, Chemistry

**Experience Needed:** Mid Level

Minimum 3 years of equipment operations experience using mechanical, electrical, instrument or control system skills

**Employer Type:** Agriculture, Consultants, Utilities

**Related Careers:**
1. Landfill Gas Technician

#### Biomass Plant Operations, Engineering & Maintenance

**Description:** Design, construct, operate and/or maintain plants that generate electricity from the combustion of biomass.

**Salary:** Expected to be similar to operations, engineering and maintenance personnel at other facilities

**Minimum Education:** Bachelor’s degree or higher in Engineering

**Recommended College Coursework:** Resource/Engineering, Computer Programming

**Experience Needed:** High Level

Minimum 3-5 years as a power plant operator

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Geothermal operations engineer

### Hydrogen Energy Plant Installation, Operations & Management

#### Hydrogen Power Plant Installation, Operations, Engineering & Management Staff – General

**Salary:** Expected to be similar to operations, engineering and maintenance personnel at other facilities

**Salary:** Approx. $9 - $14/hour (similar to other waste haulers)

**Minimum Education:** Bachelor’s Degree in Chemical or Industrial Engineering

**Recommended College Coursework:** Resource/Petroleum Engineering, Computer Programming

**Certification:** Dependent on position sought

**Experience Needed:** High Level

Minimum 3 years with process and/or chemical engineering experience in a power plant

**Employer Type:** Private Firms, Power Plants/Facilities

#### Hydrogen Plant Operator & Operations Manager

**Description:** Accountable for overall management of operations of a hydrogen energy generating facility.

**Salary:** $37 - $65/hour

**Minimum Education:** Bachelor’s Degree in Engineering

**Recommended College Coursework:** Engineering, Alternative Energies, Chemistry

**Experience Needed:** High Level

Minimum 3-5 years as a power plant operator

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Geothermal operations engineer
Hydroelectric development, manufacturing, and engineering

**HYDROELECTRIC COMPONENT MACHINIST**

**Description:** Make precision metal or plastic parts, use computer numerically controlled machine tools, and set up and operate all of the basic machine tools and many specialized variations for hydroelectric power generation.

**Salary:** $12 - $21/hour

**Minimum Education:** Apprenticeship or Trade School

**Recommended College Coursework:** Metalworking, Drafting, Math, and Computer courses

**Experience Needed:** Entry to Mid Level

**Journey level status**

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Welder
2. Sheet Metal Worker

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**HYDROELECTRIC CONSTRUCTION: SHEET METAL WORKER**

**Description:** Perform all operations necessary to make, install, and repair a hydroelectric generator.

**Salary:** $14 - $22/hour

**Minimum Education:** Apprenticeship or Trade School

**Recommended College Coursework:** Math, Mechanical Drawing, Metal shop, Welding, Heating and Air-Conditioning

**Experience Needed:** Entry to Mid Level

**Journey level status**

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Machinist
2. Welder

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**HYDROELECTRIC PLANT ELECTRICAL ENGINEER**

**Description:** Design hydroelectric plants, including preparation of drawings, specifications, and supporting calculations. Design electrical controls, SCADA communications and power system relay protection for hydroelectric power generation facilities. Test all aspects of electrical components.

**Salary:** $90,000/year or more

**Minimum Education:** Bachelor's Degree in Electrical Engineering

**Recommended College Coursework:** Power Engineering, Electrical Design, Hydrology

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level; 5 years with similar responsibilities

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Energy Engineer
2. Solar Energy Engineer

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**HYDROELECTRIC PLANT MECHANICAL ENGINEER**

**Description:** Design, develop and test all aspects of mechanical components, equipment and machinery associated with hydroelectric plants.

**Salary:** $90,000/year or more

**Minimum Education:** Bachelor's Degree in Mechanical Engineering

**Recommended College Coursework:** Hydroelectric Power, Mechanical Engineering

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level

**5 years with similar responsibilities**

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Electrical Engineer
2. Solar Energy Engineer

---

**HYDROELECTRIC STRUCTURAL ENGINEER**

**Description:** Analyze design structures associated with hydroelectric projects, such as concrete dams, intakes, powerhouses, spillways and foundations. Work involves all stages of projects, from feasibility to final detailed design.

**Salary:** $80,000 - $93,000/year

**Minimum Education:** Bachelor’s degree in Civil/ Structural Engineering; Master’s or Doctorate’s Degree preferred

**Recommended College Coursework:** Civil/ Structural Engineering, Hydraulics, GIS

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level

**10 years experience with layout and structural design of hydroelectric power generators**

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Electrical Engineer
2. Solar Energy Engineer
### Hydroelectric Operation Maintenance Worker

**Description:** Complete a wide variety of tasks in support of hydroelectric power generation systems.

**Salary:** $21 - $27/hour

**Minimum Education:** GED/High School Diploma; Trade School or Apprenticeship preferred

**Recommended College Coursework:** Plant Operations and Maintenance

**Experience Needed:** Entry Level

2 years experience in related field if no higher education

6 months required with Trade School or Apprenticeship experience

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Landfill Gas Technician

### Hydroelectric Plant Efficiency Operator

**Description:** Maintain and monitor plant equipment for efficient and safe plant operations and plan and handle all hazardous materials and wastes in a safe and environmentally sensitive manner.

**Salary:** $23 - $26/hour

**Minimum Education:** GED/High School Diploma

**Certification:** Hazardous Materials (HAZMAT)

**Experience Needed:** High Level

Minimum 5 years of power plant operating experience

**Employer Type:** Government, Power Plants/Facilities

**Related Careers:**
1. Weatherization Operations Manager

### Hydroelectric Plant Electrical Operations Supervisor

**Description:** Establish maintenance priorities and diagnose power plant electrical problems.

**Salary:** $78,000 - $92,000/year

**Minimum Education:** Associate’s Degree in Business or Technical discipline.

**Recommended College Coursework:** Business Relations, Electrical Engineering, Power generation systems

**Experience Needed:** Mid to High Level

Journey level status

Minimum 5 years performing or supervising the functions of electrical systems/equipment maintenance directly associated with a large generating facility

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Hydroelectric Power Generation Engineer

### Hydroelectric Plant Installation Technician

**Description:** Perform journey-level mechanical installation and maintenance duties in a hydroelectric power plant and performs preventive maintenance, welding, pipefitting, machining and rigging incidental to journeyman mechanical maintenance work.

**Salary:** $35/hour

**Minimum Education:** Trade School or Apprenticeship

**Recommended College Coursework:** Plumbing, Pipefitting, Operations & Maintenance, Hydrology

**Experience Needed:** Mid to High Level

Journey level status

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Solar Electric System Installation Technician
2. Geothermal Plant Installation Technician

### Hydrogeologist and Hydrologist

**Description:** Conduct field-related activities connected to the groundwater monitoring duties and collect water level measurements and water quality samples from production and monitoring wells.

**Salary:** $58,500 - $78,200/year

**Minimum Education:** Bachelor’s Degree in the field of Geology, Hydrogeology, Earth Science or related field

**Recommended College Coursework:** Hydrogeology, Earth Sciences, Geology

**Experience Needed:** Mid Level

Some experience in groundwater sampling activities and hydrogeologic data presentation is a plus

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Water Purification Systems Service Technician

### Biologist – Marine/Fisheries

**Description:** Plan and conduct evaluations of factors affecting fish populations and provide oversight of fisheries monitoring programs.

**Salary:** $25 - $32/hour

**Minimum Education:** Bachelor’s degree in Biology or related field

**Recommended College Coursework:** Biology, Marine Biology

**Experience Needed:** Mid to High Level

**Employer Type:** Private Firms

**Related Careers:**
1. Environmental Scientist
Hydroelectric installation, maintenance, and project management, continued

**HYDROELECTRIC POWER GENERATION ENGINEER**

**Description:** Prepare specifications, performance modeling and analysis, cost estimations and negotiation of supply and service contracts for a hydroelectric power generation facility.

**Salary:** $90,000 - $140,000/year

**Minimum Education:** Bachelor’s degree in Mechanical Engineering

**Recommended College Coursework:** Mechanical Engineering, Renewable Energies

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level

5 years experience with boilers and steam turbines, vessels, piping, valves, control systems, equipment and piping supports systems

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. PV Power Systems Engineer
2. Director of Wind Development

---

**SAFETY INVESTIGATOR/CAUSE ANALYST**

**Description:** Receive, investigate, and respond to employees concerns about plant safety.

**Salary:** $88,000 - $104,000/year

**Minimum Education:** Bachelor degree in Business or Engineering

**Recommended College Coursework:** Business, Engineering, Plant Safety

**Experience Needed:** Mid to High Level

Minimum 3 years performing cause analysis, investigations or consulting. Minimum 2 years of power plant experience

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Plant Safety Engineer

---

**PLANT TECHNICAL SPECIALIST – SAFETY EQUIPMENT TESTING**

**Description:** Perform seismic testing of safety-related equipment and other technical surveillances.

**Salary:** $64,000 - $76,000/year

**Minimum Education:** Bachelor’s degree or equivalent combination of education, training and experience

**Recommended College Coursework:** Plant Safety, Quality Assurance

**Experience Needed:** High Level

Minimum 5 years technical and/or inspection-related experience.

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Plant Safety Engineer

---

**PLANT MAINTENANCE SUPERVISING TECHNICAL OPERATOR**

**Description:** Manage and ensure uniform application and technical correctness of the plants maintenance procedures and specifications.

**Salary:** $27 - $30/hour

**Minimum Education:** Bachelor's Degree in Engineering or technical related field

**Recommended College Coursework:** Mechanical/ Electrical Engineering

**Experience Needed:** High Level

Minimum 5 years experience in a supervisory role

**Employer Type:** Government, Power Plants/Facilities

**Related Careers:**
1. Plant Safety Engineer

---

**ENVIRONMENTAL, HEALTH & SAFETY ENGINEERING MANAGER**

**Description:** Direct and oversee environmental, health, and safety activities for the operation, and develop, coordinate, and implement programs to maintain safe and healthy working conditions.

**Salary:** $73,000 - $93,000/year

**Minimum Education:** Bachelor's degree in Environmental Science, Health & Safety Management, Environmental Engineering or related discipline

**Recommended College Coursework:** Engineering, Environmental Health & Safety

**Experience Needed:** Mid to High Level

Minimum 3 years of related Environmental Health and Safety experience with focus in a manufacturing/industrial environment

**Employer Type:** Private Firms, Government, Power Plants / Facilities

**Related Careers:**
1. Environmental Engineer
Plant environmental, health & safety (general facility positions), continued

**ENVIRONMENTAL HEALTH & SAFETY LEAD**

**Description:** Ensure compliance of plant operations with federal and state requirements relating to air emissions, solid waste, hazardous waste, waste water treatment and chemical management.

**Salary:** $81,000 - $96,000/year

**Minimum Education:** Master's degree, or equivalent, in Environmental Science, Environmental Management, Environmental Engineering, Chemistry or Biology

**Recommended College Coursework:** Environmental Studies, Engineering, Sciences

**Experience Needed:** Mid Level

1 year plus Master's degree or 3 years plus Bachelor's

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Environmental, Health & Safety Engineering Manager

---

**PLANT SAFETY ENGINEER**

**Description:** Conduct plant safety meetings and inspections and help the plant to improve safety statistics while working to standardize plant safety regulations for all related plants

**Salary:** $90,000 - $107,000/year

**Minimum Education:** Bachelor's Degree

**Recommended College Coursework:** Industrial Safety, Occupational Safety/Health, Industrial Hygiene

**Certification:** Safety Certification

**Experience Needed:** High Level

5-10 years of industrial safety experience in a power plant environment

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Safety Investigator/Cause Analyst

---

**CARBON SEQUESTRATION PLANT INSTALLATION, OPERATIONS, ENGINEERING & MANAGEMENT**

**Description:** Design, construct, operate and / or maintain carbon sequestration facilities that inject and store carbon dioxide in geologic formations.

**Salary:** Expected to be similar to operations, engineering and maintenance personnel at other facilities

**Minimum Education:** Bachelor's Degree or higher in Engineering

**Recommended College Coursework:** Resource/ Petroleum Engineering, Computer Programming

**Certification:** Dependent on position sought

**Experience Needed:** High Level

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Restoration Planner

---

**GEOLOGIST & HYDROGEOLOGIST**

**Description:** Perform site characterization and analysis on potential and ongoing CCS sites and field-related activities connected to CCS monitoring.

**Salary:** $58,500 - $85,000/year

**Minimum Education:** B.S. Degree in the field of Geology, Hydrogeology, Earth Science or related field, with Master's or Ph.D. likely required for most positions

**Recommended College Coursework:** Geology, Earth Science, Biology, Chemistry, Physics, Math

**Experience Needed:** Mid to High Level

Experience in geology, geologic sequestration, groundwater sampling activities and hydrogeologic data presentation

**Employer Type:** Private Firms, Government, Power Plants/Facilities

---

**GIS SPECIALIST**

**Description:** Develop and use advanced Geographic Information Systems programs and methods to create site analysis and carbon migration and monitoring plans.

**Salary:** $35,000 - $85,000/year

**Minimum Education:** Associate Degree; Bachelor's Degree in Geography

**Recommended College Coursework:** GIS courses, Engineering, Math

**Experience Needed:** High Level

5-7 years in related field

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Restoration Planner
### Smart Grid Engineer

**Description:** Design, construct, operate and / or maintain power plant facilities that capture carbon during the power generating process.

**Salary:** $91,000 - $107,000/year

**Minimum Education:** Advanced level of capability either through Bachelor's Degree, PhD/Master's Degree, or equivalent experience

**Recommended College Coursework:** Electrical Engineering, Systems Control, Computer Science and Information Technology

**Experience Needed:** High Level
- Journey level status
- 2 – 5 years of related experience dealing with the technical aspects of power grids

**Employer Type:** Private Firms, Government, Power Plants / Facilities

**Related Careers:**
1. Electrical Engineer

### Power System Operator

**Description:** Monitor and operate equipment on transmission lines and in transformer and power generation stations, and control the distribution and regulate the flow of electrical power in the transmission network grid.

**Salary:** $25 - $30/hour

**Minimum Education:** GED/High School Diploma
**Recommended Coursework:** Computer Programming, Electronics

**Experience Needed:** Mid to High Level
- 3-4 years of a training program, typically in-house

**Employer Type:** Government, Power Plants/Facilities

**Related Careers:**
1. Hydroelectric Plant Operator

### Energy Commission Specialist

**Description:** Coordinate and develop policy programs.

**Salary:** $70,000 - $83,000/year

**Minimum Education:** Bachelor's Degree

**Recommended College Coursework:** Public Policy, Policy Implementation, Energy Generation and Conservation, Environmental Impact Assessment

**Experience Needed:** High Level

**Employer Type:** Government

**Related Careers:**
1. Air Quality Specialist
2. Air Resources Engineer

### Sustainability Consultant

**Description:** Develop specific solutions to create high performance buildings.

**Salary:** $35,000 - $75,000/year

**Minimum Education:** Bachelor's Degree in Architecture
**Certification:** LEED Accredited Professional

**Experience Needed:** High Level
- 5+ years as project architect in base building, and interior project
- 1+ years experience as LEED consultant

**Employer Type:** Government, Private Firms

**Related Careers:**
1. Electrical Engineer

### Compliance Manager

**Description:** Evaluate and report on compliance with policies, procedures, contracts, and good business practices.

**Salary:** $50,000 - $75,000/year

**Minimum Education:** Bachelor's Degree in related field

**Experience Needed:** High Level
- 8 years progressive leadership experience
- 4 years of internal or public audit or compliance

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Environmental Compliance Specialist
### FIELD ENERGY CONSULTANT

**Description:** Serve as field-based energy efficiency consultant. Encourage equipment and energy system retrofits at business sites.

**Salary:** $30 - $35/hour (some commission)

**Minimum Education:** GED/High School Diploma

**Recommended College Coursework:** Marketing & Sales, HVAC, Mechanical Engineering

**Experience Needed:** Entry to Mid Level
1-2 years with consultant sales background and experience building a portfolio of businesses; familiarity with HVAC, lighting and/or refrigeration preferred

**Employer Type:** Private Firms

**Related Careers:**
1. Residential/Commercial Solar Sales Consultant
2. Renewable Energy Consultant

### ENERGY EFFICIENCY FINANCE MANAGER

**Description:** Manage energy efficiency projects and policies and conduct relevant market analysis and research.

**Salary:** $90,000/year

**Minimum Education:** Bachelor's Degree in Accounting, Finance, Business Administration; MBA preferred

**Recommended College Coursework:** Economics, Environmental Studies, Public Policy, Finance, Accounting

**Experience Needed:** High Level
8 or more years in related field with supervisory responsibilities

**Employer Type:** Private Firms

**Related Careers:**
1. Financial Officer

### WATER SYSTEMS DESIGNERS & ENGINEERS

**Description:** Design and install energy efficient water systems in residential and commercial settings.

**Salary:** Commensurate with other engineering fields

**Minimum Education:** Trade School or Apprenticeship

**Recommended College Coursework:** Plumbing, Pipefitting, Energy Efficiency, Mechanical Engineering

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** Mid Level

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Plumber

---

### LEED TECHNICAL REVIEWER

**Description:** Serve as technical building subject matter expert and internal consultant to Green Building Certification Institute and certification bodies that review projects under the LEED Green Building Rating System.

**Salary:** $45,000 - $75,000/year

**Minimum Education:** Bachelor's Degree

**Experience Needed:** High Level
10 years experience in the commercial building industry specializing in architecture, engineering, construction, or facility management

**Employer Type:** Private firms

### LEED FOR HOMES TECHNICAL DEVELOPMENT DIRECTOR

**Description:** Manage the technical evaluation of LEED for homes rating system, and manage LEED for homes contractors and vendors.

**Salary:** $35,000 - $65,000/year

**Minimum Education:** Bachelor's Degree in Architecture, Engineering, Construction, or Management

**Experience Needed:** High Level
5-10 years in program development and management

**Employer Type:** Private firms
### Green building practices and retrofits — project design, development, and engineering, continued

#### LEED MANAGER
- **Description:** Serve as the principle program lead and comprehensive management for a LEED market sector.
- **Salary:** $50,000 - $70,000/year
- **Minimum Education:** Master's Degree in related building industry, policy, or environmental discipline
- **Experience Needed:** High Level 5-7 years of relevant experience
- **Employer Type:** Private firms

#### GREEN BUILDING CONSULTANT
- **Description:** Advise and plan green building projects in commercial and residential sectors.
- **Salary:** $53,000 - $91,000/year
- **Minimum Education:** Bachelor's Degree
- **Certification:** LEED Accredited Professional
- **Experience Needed:** High Level 7+ years in related field
- **Employer Type:** Private Firm, Government
- **Related Careers:**
  1. Sustainability Consultant

#### CONSTRUCTION PROJECT MANAGER: EFFICIENCY AND RENEWABLE
- **Description:** Lead the final design, construction and successful implementation of energy efficient and renewable energy projects.
- **Salary:** $45,000 - $80,000/year
- **Minimum Education:** Bachelor's Degree
- **Experience Needed:** High Level Minimum 4-10 years mechanical, engineering, or federal construction project management work experience focusing on facility and infrastructure construction, renovations, retrofits, upgrades, building controls and automation, energy services
- **Employer Types:** Private firms, Government

### Green building project design & engineering

#### REFRIGERATION ENGINEER
- **Description:** Design and install refrigeration units and maintain and repair controls.
- **Salary:** $30 - $50/hour
- **Minimum Education:** Bachelor's Degree in Engineering or equivalent Trade School/Apprenticeship
- **Recommended College Coursework:** Mechanical Engineering, Refrigeration controls
- **Experience Needed:** Mid to High Level
- **Employer Type:** Private Firms, Power Plants/Facilities
- **Related Careers:**
  1. HVAC Engineer

#### ELECTRICAL ENGINEER
- **Description:** Work within LEED-certified, sustainable, Green-building Mechanical, Electrical and Plumbing (MEP) or Architectural industry.
- **Salary:** $71,000 - $85,000/year
- **Minimum Education:** Bachelor's degree in Electrical Engineering
- **Recommended College Coursework:** Electrical Engineering Engineering
- **Certification:** Professional Engineer (P.E.)
- **Experience Needed:** High level 4-7 years Electrical Engineering experience in an MEP or construction firm
- **Employer Type:** Private Firms
- **Related Careers:**
  1. Civil Engineer

#### CIVIL ENGINEER
- **Description:** Deal with the overall design, construction and maintenance of green buildings, and work with project managers on building projects within design specifications.
- **Salary:** $73,000 - $84,000/year
- **Minimum Education:** Bachelor's degree in Civil Engineering; Master's Degree preferred
- **Recommended College Coursework:** Engineering, Land Use, Green Building
- **Certification:** Professional Engineer (PE) or Engineer in Training (E.I.T.)
- **Experience Needed:** High Level Most projects require experience of 2 – 5 years
- **Employer Type:** Private Firms, Government
- **Related Careers:**
  1. Energy Engineer
  2. Commercial Green Building and Retrofit Architect
### Green building project design & engineering, continued

<table>
<thead>
<tr>
<th>INDUSTRIAL GREEN SYSTEMS &amp; RETROFIT DESIGNER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong> Design energy efficient and retrofit structures on industrial buildings.</td>
</tr>
<tr>
<td><strong>Salary:</strong> $90,000 - $107,000/year</td>
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<tr>
<td><strong>Minimum Education:</strong> Bachelor's Degree in Architecture</td>
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<tr>
<td><strong>Recommended College Coursework:</strong> Architecture, Industrial Building</td>
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<tr>
<td><strong>Certification:</strong> LEED-Certified Builder</td>
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<tr>
<td><strong>Experience Needed:</strong> High Level</td>
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<tr>
<td><strong>5-8 years experience</strong></td>
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<td><strong>Employer Type:</strong> Private Firms</td>
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<tr>
<td><strong>Related Careers:</strong></td>
</tr>
<tr>
<td>1. Structural Engineer</td>
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<tr>
<td>2. Commercial/Residential Green Building &amp; Retrofit Architect</td>
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<thead>
<tr>
<th>COMMERCIAL GREEN BUILDING &amp; RETROFIT ARCHITECT</th>
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<tbody>
<tr>
<td><strong>Description:</strong> Participate in all phases of design for commercial and educational buildings.</td>
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<tr>
<td><strong>Salary:</strong> $90,000 – $107,000/year</td>
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<tr>
<td><strong>Minimum Education:</strong> Bachelor's Degree in Architecture</td>
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<tr>
<td><strong>Recommended College Coursework:</strong> Architecture, Drafting, Energy Efficiency</td>
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<tr>
<td><strong>Certification:</strong> LEED-Certified Builder</td>
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<tr>
<td><strong>Experience Needed:</strong> High Level</td>
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<tr>
<td><strong>Minimum 5 years experience</strong></td>
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<td><strong>Employer Type:</strong> Private Firms</td>
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<td><strong>Related Careers:</strong></td>
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<tr>
<td>1. Civil Engineer</td>
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<tr>
<td>2. Industrial Green Systems &amp; Retrofit Designer</td>
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<tr>
<td>3. Residential Green Building &amp; Retrofit Architect</td>
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<thead>
<tr>
<th>RESIDENTIAL GREEN BUILDING &amp; RETROFIT ARCHITECT</th>
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<tbody>
<tr>
<td><strong>Description:</strong> Design residential buildings that meet LEED qualifications as well as develop retrofits for current structures.</td>
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<tr>
<td><strong>Salary:</strong> $90,000 - $107,000/year</td>
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<tr>
<td><strong>Minimum Education:</strong> Bachelor's Degree in Architecture</td>
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<tr>
<td><strong>Recommended College Coursework:</strong> Architecture, Civil Engineering, Drafting, Retrofitting</td>
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<tr>
<td><strong>Certification:</strong> LEED-Accredited Professional</td>
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<td><strong>Experience Needed:</strong> High Level</td>
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<td><strong>Employer Type:</strong> Private Firms</td>
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<td><strong>Related Careers:</strong></td>
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<tr>
<td>1. Civil Engineer</td>
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<td>2. Industrial Green Systems &amp; Retrofit Designer</td>
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<td>3. Residential Green Building &amp; Retrofit Architect</td>
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<thead>
<tr>
<th>LIGHTING &amp; HVAC ENERGY ENGINEER</th>
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<tbody>
<tr>
<td><strong>Description:</strong> Provide a full range of technical services related to energy efficiency, renewable energy, carbon emissions reductions and cogeneration projects.</td>
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<tr>
<td><strong>Salary:</strong> $77,000 - $91,000/year</td>
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<tr>
<td><strong>Minimum Education:</strong> Bachelor's Degree in Engineering or related field</td>
</tr>
<tr>
<td><strong>Recommended College Coursework:</strong> Engineering, Energy Efficient Building, HVAC and Lighting systems, Green Building Design</td>
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<tr>
<td><strong>Experience Needed:</strong> Mid to High Level</td>
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<tr>
<td>Minimum 3 years of energy engineering experience in the identification and evaluation of energy efficient measures</td>
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<td><strong>Employer Type:</strong> Private Firms</td>
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<td><strong>Related Careers:</strong></td>
</tr>
<tr>
<td>1. Energy Engineer</td>
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<thead>
<tr>
<th>HVAC ENGINEER</th>
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<tbody>
<tr>
<td><strong>Description:</strong> Design and install all types of air conditioning, heating and ventilation systems, building automation systems and hot water heating for building heat.</td>
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<tr>
<td><strong>Salary:</strong> $34 - $50/hour</td>
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<tr>
<td><strong>Minimum Education:</strong> Trade School, Apprenticeship or Associate's Degree</td>
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<tr>
<td><strong>Recommended College Coursework:</strong> Mechanical Engineering, HVAC controls</td>
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<tr>
<td><strong>Experience Needed:</strong> High Level</td>
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<tr>
<td>Journey Level plus 5 years related experience.</td>
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<tr>
<td><strong>Employer Type:</strong> Private Firms, Power Plants/Facilities</td>
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<tr>
<td><strong>Related Careers:</strong></td>
</tr>
<tr>
<td>1. Refrigeration Engineer</td>
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<tr>
<td>2. Energy Engineer</td>
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<tr>
<td>3. HVAC Technician</td>
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<thead>
<tr>
<th>SENIOR HVAC ENGINEER</th>
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<tr>
<td><strong>Description:</strong> Coordinate HVAC equipment, ductwork and piping layouts with architectural/structural designs to prevent conflict during construction, and work on Title 24 compliance.</td>
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<tr>
<td><strong>Salary:</strong> $75,000 - $120,000/year</td>
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<tr>
<td><strong>Minimum Education:</strong> Bachelor of Science in Mechanical Engineering</td>
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<tr>
<td><strong>Recommended College Coursework:</strong> Mechanical Engineering, HVAC, Building Design</td>
</tr>
<tr>
<td><strong>Certification:</strong> Professional Engineer (P.E.)</td>
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<tr>
<td><strong>Experience Needed:</strong> High Level</td>
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<tr>
<td>10 years working with a consulting engineering firm as an HVAC engineer, or with a design-build mechanical contractor</td>
</tr>
<tr>
<td><strong>Employer Type:</strong> Private Firms</td>
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<tr>
<td><strong>Related Careers:</strong></td>
</tr>
<tr>
<td>1. Civil Engineer</td>
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<tr>
<td>2. Environmental Construction Engineer</td>
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<td>ROLE</td>
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<tr>
<td><strong>ENVIRONMENTAL CONSTRUCTION ENGINEER</strong></td>
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<tr>
<td><strong>STRUCTURAL DESIGN ENGINEER</strong></td>
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<tr>
<td><strong>ENERGY ENGINEER</strong></td>
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<tr>
<td><strong>SITE SUPERVISING TECHNICAL OPERATOR</strong></td>
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<tr>
<td><strong>INDOOR &amp; OUTDOOR LANDSCAPE ARCHITECT</strong></td>
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</tbody>
</table>
### HVAC MAINTENANCE/REPAIR TRAINEE

**Description:** Install and maintain heating, ventilation, and air conditioning equipment, tests and repair environmental systems and repair or replace sealants, parts, and components.

**Salary:** $15 - $20/hour

**Minimum Education:** GED/High School Diploma

**Experience Needed:** Entry level

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. HVAC Technician
2. HVAC Engineer

---

### RESIDENTIAL AIR SEALING TECHNICIAN

**Description:** Develop and implement effective air sealing techniques and applications while receiving on-the-job training working and explaining to customers the applications and benefits of air sealing.

**Salary:** $14 - 23/hour

**Minimum Education:** GED/High School Diploma; Trade School or Apprenticeship recommended

**Experience Needed:** Entry Level

Residential construction or work on an insulation crew is a plus

**Employer Type:** Private Firms

**Related Careers:**
1. HVAC Trainee

---

### INSULATION INSTALLER

**Description:** Responsible for pasting, wiring, taping or spraying insulation onto a variety of structures and surfaces to exclude or retain heat.

**Salary:** $10 - $12/hour

**Minimum Education:** GED/High School Diploma

**Experience Needed:** Entry Level

1-3 months related experience

**Employer Type:** Private Firms

**Related Careers:**
1. Carpenter

---

### HVAC TECHNICIAN

**Description:** Install, maintain, and repair heating, solar panels and air conditioning systems in schools, businesses, hospitals, businesses and other buildings.

**Salary:** $24,000 - $60,000/year

**Minimum Education:** Associate Degree or Trade School

**Certification:** HVAC license

**Experience Needed:** Entry Level

**Employer Type:** Private firm

---

### ENVIRONMENTAL COMPLIANCE SPECIALIST

**Description:** Perform environmental compliance assessments, document compliance status, and make recommendations on corrective action required to achieve compliance. Develop plans and procedures necessary to achieve and maintain compliance. Develop audit plans and audit surveillance checklists.

**Salary:** $20 - $30/hour

**Minimum Education:** Bachelor’s Degree in Science or Engineering preferred

**Recommended College Coursework:** Science, Engineering, Green Building

**Experience Needed:** Mid to High Level

1-3 years related experience with degree.

5-10 years related experience non-degreed

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Compliance Manager
2. Energy Field Auditor

---

### GREEN BUILDING PROJECT INSTALLATION AND OPERATIONS

### RESIDENTIAL AIR SEALING TECHNICIAN
## MACHINIST
**Description:** Make precision metal or plastic parts, operate computer numerically controlled machine tools, and set up and operate all of the basic machine tools and many specialized variations.

**Salary:** $12 - $21/hour

**Minimum Education:** Apprenticeship or Trade School

**Recommended College Coursework:** Metalworking, Drafting, Math and Computer courses

**Experience Needed:** Mid Level

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1.  Welder
2.  Sheet Metal Worker

## WELDER
**Description:** Operate manual, semiautomatic, and automatic arc and gas equipment, and fabricate and repair machine parts, motors, trailers and manufacturing equipment.

**Salary:** $12 - $20/hour

**Minimum Education:** Apprenticeship or Trade School

**Recommended College Coursework:** Welding, Machine Shop, Math, Drafting, Physics, Chemistry, and Engineering Certification: Various certifications dealing with different materials and uses

**Experience Needed:** Entry to Mid Level

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1.  Machinist
2.  Sheet Metal Worker

## CARPENTER
**Description:** Work in almost every type of construction, with jobs including reading plans, identifying and locating materials, measuring and marking, assembly and installation, and operating hand tools and power equipment.

**Salary:** $17 - $21/hour

**Minimum Education:** Apprenticeship or Trade School

**Recommended College Coursework:** Math, Drafting, and Shop courses

**Experience Needed:** Entry to Mid-Level Journey Level status

**Employer Type:** Private Firms

**Related Careers:**
1.  Roofer

## WINTER PUFRIFICATION SYSTEMS SERVICE TECHNICIAN
**Description:** Install and service water purification systems at customer sites, including but not limited to reverse osmosis and deionization applications.

**Salary:** $20 - $23/hour

**Minimum Education:** GED/High School Diploma; Associate Degree in Electrical/Mechanical Engineering or Water Treatment preferred

**Recommended College Coursework:** Chemistry, Hydrology

**Experience Needed:** Mid Level

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1.  Hydrogeologist
<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
<th>Salary</th>
<th>Minimum Education</th>
<th>Recommended College Coursework</th>
<th>Experience Needed</th>
<th>Employer Type</th>
<th>Related Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ELECTRICAL SYSTEM INSTALLER</strong></td>
<td><strong>Description</strong>: Plan, lay out, install, repair, and maintain electrical equipment that provides light, heat, communications and power, and install electrical wires, cables and conduit systems.</td>
<td><strong>Salary</strong>: $21 - $27/hour</td>
<td><strong>Minimum Education</strong>: Apprenticeship or Trade Schools</td>
<td><strong>Recommended College Coursework</strong>: Electric Installation courses</td>
<td><strong>Experience Needed</strong>: Mid Level Journey Level status</td>
<td><strong>Employer Type</strong>: Private Firms, Government, Power Plants/Facilities</td>
<td>1. Electrical Engineer 2. Commercial Electrician</td>
</tr>
<tr>
<td><strong>FIELD TECHNICIAN</strong></td>
<td><strong>Description</strong>: Install, perform maintenance and repair of facilities, field installations, commissioning of advanced energy management and control systems, controls programming and controls sales.</td>
<td><strong>Salary</strong>: $22 - $40/hour and higher depending on experience level</td>
<td><strong>Minimum Education</strong>: Trade School or Apprenticeship</td>
<td><strong>Experience Needed</strong>: Entry to Mid Level Master or Journey level. Should have HVAC, electrical and or automation and controls installation and service experience, 1-3 years of related experience and/or training, or equivalent combination of education and experience</td>
<td><strong>Employer Type</strong>: Private Firms, Government, Power Plants/Facilities</td>
<td><strong>Related Careers</strong>: 1. Solar Field Service Technician 2. Energy Engineer</td>
<td></td>
</tr>
<tr>
<td><strong>BUILDING MAINTENANCE ENGINEER</strong></td>
<td><strong>Description</strong>: Effectively and efficiently operate and maintain all HVAC and MEP equipment, and serve as a systems operator and perform and supervise maintenance work.</td>
<td><strong>Salary</strong>: $30 - $40/hour</td>
<td><strong>Minimum Education</strong>: GED/High School Diploma, Trade School or Apprenticeship</td>
<td><strong>Recommended College Coursework</strong>: HVAC Maintenance, Energy Auditing</td>
<td><strong>Experience Needed</strong>: Entry to Mid Level 2-3 years experience in commercial HVAC and in operating large tonnage chill plant</td>
<td><strong>Employer Type</strong>: Private Firms, Power Plants/Facilities</td>
<td><strong>Related Careers</strong>: 1. HVAC Engineer</td>
</tr>
<tr>
<td><strong>ROOFING &amp; SKYLIGHT INSTALLER</strong></td>
<td><strong>Description</strong>: Install skylights and other energy efficient roof ventilation systems.</td>
<td><strong>Salary</strong>: $15 - $20/hour</td>
<td><strong>Minimum Education</strong>: Apprenticeship or Trade School</td>
<td><strong>Recommended College Coursework</strong>: Carpentry, Roofing, Energy Efficiency</td>
<td><strong>Experience Needed</strong>: High Level 5-7 years related roofing and framing experience</td>
<td><strong>Employer Type</strong>: Private Firms, Power Plants/Facilities</td>
<td><strong>Related Careers</strong>: 1. Carpenter</td>
</tr>
<tr>
<td><strong>WEATHERIZATION OPERATIONS MANAGER</strong></td>
<td><strong>Description</strong>: Manage day-to-day weatherization activities to ensure that production goals are met, provide weatherization services, coordinate weatherization staff, and implement contractor training.</td>
<td><strong>Salary</strong>: $30,000 - $60,000/year</td>
<td><strong>Minimum Education</strong>: Bachelor's Degree</td>
<td><strong>Experience</strong>: High Level 2 years experience in construction supervision and/or management. Technical and functional skills in building trades</td>
<td><strong>Employer Type</strong>: Private Firms</td>
<td><strong>Related Careers</strong>: 1. Construction Foreman</td>
<td></td>
</tr>
</tbody>
</table>
### Renewable Energy Consultant

**Description:** Assess industry trends and related implications, monitor product developments and preferences, explore competitive landscapes and examine emerging technologies.

**Salary:** Hourly rate is commensurate with experience level

**Minimum Education:** Bachelor’s Degree; Master’s Degree preferred

**Recommended College Coursework:** Specialize in Renewable Energy, with focus on any or all technologies

**Experience Needed:** High Level

**Employer Type:** Private Firms, Government, Education

**Related Careers:**
1. Environmental Scientist

### Industrial Energy Field Auditor

**Description:** Conduct energy audits of industrial areas that consist of visually checking HVAC equipment, ducts, windows and weather-stripping to capture data for future use.

**Salary:** $28 - $40/hour

**Minimum Education:** Bachelor’s Degree in Building Materials, Environmental Science, Environmental Studies, Energy Management

**Recommended College Coursework:** Environmental Studies, Industrial Operations

**Experience Needed:** Mid Level

2-3 years in related field of auditing and/or energy efficiency sector

**Employer Type:** Private Firms

**Related Careers:**
1. Energy Engineer

### Commercial Energy Field Auditor

**Description:** Conduct energy audits in commercial businesses that consist of visually checking HVAC equipment, lighting, ducts, windows and weather-stripping to capture data for future use and identify areas of improvement and make recommendations to business.

**Salary:** $12 - $14/hour

**Minimum Education:** Associate’s Degree in Building Materials, Environmental Science, Environmental Studies, Energy Management; Bachelor’s Degree preferred

**Recommended College Coursework:** Environmental Studies, Industrial Operations

**Certification:** HERS

**Experience Needed:** Entry to Mid Level

**Employer Type:** Private Firms, Public Utilities

**Related Careers:**
1. HVAC Technician
2. Residential Energy Field Auditor
3. Industrial Energy Field Auditor

### Residential Energy Field Auditor

**Description:** Conduct home energy audits in residential homes that consist of visually checking HVAC equipment, lighting, ducts, windows and weather-stripping, and identify areas of improvement and makes recommendations to homeowner.

**Salary:** $12 - $14/hour

**Minimum Education:** Associate’s Degree in Building Materials, Environmental Science, Environmental Studies, Energy Management; Bachelor’s Degree preferred

**Recommended College Coursework:** Environmental Studies, Energy Management, Auditing

**Certification:** HERS

**Experience Needed:** Entry to Mid Level

**Employer Type:** Private Firms, Public Utilities

**Related Careers:**
1. Commercial Energy Field Auditor
2. Industrial Energy Field Auditor

### Air Pollution Specialist

**Description:** Investigate local government and land use activities, develop protocols for estimating greenhouse gas emissions, and develop community GHG inventories and evaluates GHG reduction benefits from green buildings.

**Salary:** $64,000 - $74,000/year

**Minimum Education:** Bachelor’s degree in Chemistry, Chemical Engineering, or a Physical Science

**Recommended College Coursework:** Climate Change, Emissions accounting methods, Green Building, Chemistry

**Experience Needed:** Mid to High Level

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Air Resources Engineer
### Texas Green Jobs Guidebook

#### Automotive operations, vehicle production, manufacturing & modification

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
<th>Salary</th>
<th>Minimum Education</th>
<th>Recommended College Coursework</th>
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<th>Related Careers</th>
</tr>
</thead>
</table>
| **Hybrid Powertrain Development Engineer**    | Develop powertrain designs including components and sub-systems, perform complex design analysis, create specifications and conduct calibration for alternative fuel and hybrid powertrains. | Comparable to other engineering classes, though variable with experience level | Bachelor's Degree in Electrical or Mechanical Engineering or related field | Must have knowledge of powertrain technology, vehicle engineering, development, certification, OEM calibration, alternative fuels calibration and hybrid powertrain development | Entry to Mid Level | Power Plants/Facilities | 1. Automotive Power Electronics Engineer  
2. Powertrain Control Systems & Software Engineer |
| **Diesel Retrofit Installer**                 | Install various filters on diesel-powered vehicles.                         | Varies with experience                       | GED/High School Diploma; Trade School or Apprenticeship preferred | Diesel Retrofit, Engine Design                    | Entry Level               | Private Firms      | 1. Diesel Retrofit Manufacturer                                                   |
| **Diesel Retrofit Manufacturer Plant Labor**  | Manufacture diesel particulate filters as well as other retrofitting technology. | Commensurate with other manufacturing sector positions | Trade School or Apprenticeship | Diesel Engines, Air Quality, Auto Manufacturing | Entry to Mid Level | Private Firms      | 1. Diesel Retrofit Installer                                                   |
| **Powertrain Control Systems & Software Engineer** | Design and release powertrain control systems software into embedded automotive powertrain controllers, including hydrogen internal combustion, hybrid electric and fuel cell applications. | Comparable to other engineering classes, though variable with experience level | Bachelor's Degree in Electrical or Mechanical Engineering | Engineering, Computer Software, Automotive, Alternative Fuels | Mid to High Level | Power Plants/Facilities | 1. Hybrid Powertrain Development Engineer  
2. Automotive Power Electronics Engineer |
| **Diesel Retrofit Designer**                  | Design and develop diesel retrofitting technology to produce cleaner burning engines. | Comparable to engineering jobs              | Master's Degree in Engineering; PhD preferred | Engine Design, Catalytic Converters, Diesel Retrofit | High Level               | Private Firms      | 1. Automotive Power Electronics Engineer |
| **Electric Vehicle Electrician**              | Support project planning and design implementation for electrical vehicle projects, and install dedicated circuits needed to support high current charging systems. | $22 - $26/hour                             | Associate Degree                  | 5-10 years experience including old and new aspects of electrical installations | High Level               | Power Plants/Facilities | 1. Hybrid Powertrain Development Engineer |
| **Diesel Retrofit Installer**                 | Install various filters on diesel-powered vehicles.                         | Varies with experience                       | GED/High School Diploma; Trade School or Apprenticeship preferred | Diesel Retrofit, Engine Design                    | Entry Level               | Private Firms      | 1. Diesel Retrofit Manufacturer                                                   |
| **Diesel Retrofit Manufacturer Plant Labor**  | Manufacture diesel particulate filters as well as other retrofitting technology. | Commensurate with other manufacturing sector positions | Trade School or Apprenticeship | Diesel Engines, Air Quality, Auto Manufacturing | Entry to Mid Level | Private Firms      | 1. Diesel Retrofit Installer                                                   |
| **Powertrain Control Systems & Software Engineer** | Design and release powertrain control systems software into embedded automotive powertrain controllers, including hydrogen internal combustion, hybrid electric and fuel cell applications. | Comparable to other engineering classes, though variable with experience level | Bachelor's Degree in Electrical or Mechanical Engineering | Engineering, Computer Software, Automotive, Alternative Fuels | Mid to High Level | Power Plants/Facilities | 1. Hybrid Powertrain Development Engineer  
2. Automotive Power Electronics Engineer |
| **Diesel Retrofit Designer**                  | Design and develop diesel retrofitting technology to produce cleaner burning engines. | Comparable to engineering jobs              | Master's Degree in Engineering; PhD preferred | Engine Design, Catalytic Converters, Diesel Retrofit | High Level               | Private Firms      | 1. Automotive Power Electronics Engineer |
| **Electric Vehicle Electrician**              | Support project planning and design implementation for electrical vehicle projects, and install dedicated circuits needed to support high current charging systems. | $22 - $26/hour                             | Associate Degree                  | 5-10 years experience including old and new aspects of electrical installations | High Level               | Power Plants/Facilities | 1. Hybrid Powertrain Development Engineer |

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*Texas Green Jobs Guidebook*
<table>
<thead>
<tr>
<th>Automotive operations, vehicle production, manufacturing &amp; modification, continued</th>
</tr>
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<tbody>
<tr>
<td><strong>SENIOR AUTOMOTIVE POWER ELECTRONICS ENGINEER</strong></td>
</tr>
<tr>
<td><strong>Description:</strong> Develop controls for electric traction motors and power electronics for hybrid and electric vehicle applications.</td>
</tr>
<tr>
<td><strong>Salary:</strong> Comparable to other senior level engineering jobs</td>
</tr>
<tr>
<td><strong>Minimum Education:</strong> Bachelor’s Degree in Engineering</td>
</tr>
<tr>
<td><strong>Recommended College Coursework:</strong> Engineering, Alternative Fuels, Electronic controls</td>
</tr>
<tr>
<td><strong>Experience Needed:</strong> High Level 10 years experience of both automotive engineering and motor/power electronics controls</td>
</tr>
<tr>
<td><strong>Employer Type:</strong> Plants/Facilities</td>
</tr>
<tr>
<td><strong>Related Careers:</strong> 1. Diesel Retrofit Designer</td>
</tr>
</tbody>
</table>

| **BUS SYSTEM OPERATOR** |
| **Description:** Transport passengers around scheduled routes, usually within urban areas. |
| **Salary:** $11 - $17/hour |
| **Minimum Education:** None |
| **Desired Education:** GED/High School Diploma |
| **Certification:** Appropriate driver’s license |
| **Experience Needed:** Entry Level |
| **Employer Type:** Private Firms, Government |
| **Related Careers:** 1. Train Operator |

| **ELECTRIC SHIPOYARD OPERATOR** |
| **Description:** Manage operations on an electrified port. |
| **Salary:** $44,000 - $58,000/year |
| **Minimum Education:** Bachelor’s Degree in Engineering or related field |
| **Experience Needed:** Entry Level Naval ship experience preferred |
| **Employer Type:** Private Firms, Government |
| **Related Careers:** 1. Rail Systems Operator, 2. Crane Operator |

| **TRAIN SYSTEM OPERATOR** |
| **Description:** Work as a train conductor or train system engineer. |
| **Salary:** $20 - $24/hour |
| **Minimum Education:** GED/High School Diploma |
| **Experience Needed:** Entry Level |
| **Employer Type:** Private Firm, Government |
| **Related Careers:** 1. Shipyard Operator |

| Efficient mass transit vehicle operations |

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| **Description:** Work as a train conductor or train system engineer. |
| **Salary:** $20 - $24/hour |
| **Minimum Education:** GED/High School Diploma |
| **Experience Needed:** Entry Level |
| **Employer Type:** Private Firm, Government |
| **Related Careers:** 1. Shipyard Operator |
**Civil Engineer**

**Description:** Design, construct and maintain the physical and naturally built environment, including works such as bridges and roads.

**Salary:** $73,000 - $84,000/year

**Minimum Education:** Bachelor's degree in Civil Engineering; Master's Degree preferred

**Recommended College Coursework:** Engineering, Land Use, Green Building

**Certification:** Engineer in Training (EIT) or Professional Engineer (PE)

**Experience Needed:** High Level
Most projects expect 2 – 5 years of experience

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Energy Efficient Engineer
2. Construction

---

**Environmental Engineer**

**Description:** Plan, design, and oversee construction and maintenance of structures and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, water and sewage systems, and waste disposal units to solve environmental problems. Determine sources and methods of controlling pollutants in air, water, and soil.

**Salary:** $21 - $31/hour

**Minimum Education:** Bachelor's Degree in Environmental Engineering

**Recommended College Coursework:** Science, Chemistry, Engineering

**Certification:** Engineer in Training (EIT) or Professional Engineer (PE)

**Experience Needed:** Mid to High Level
Most projects expect 2 – 5 years of experience

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Environmental Engineer
2. Energy Engineer

---

**Energy Infrastructure Engineer**

**Description:** Specialize in Transit/Rail, Highways and Bridges, Mine, Airports, and Energy Infrastructure Engineering.

**Salary:** $77,000 - $91,000/year

**Minimum Education:** Bachelor’s degree in Mechanical Engineering

**Recommended College Coursework:** Mechanical and Electrical Engineering, Infrastructure Development

**Certification:** Certified Energy Manager (CEM), Professional Engineer (PE)

**Experience Needed:** High Level
4-10 years of experience in energy management/engineering and a strong HVAC background.

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Mechanical Engineer
2. Construction

---

**Environmental Engineering Manager**

**Description:** Develop and coordinate environmental control activities including air and water quality and land conservation policies, and evaluate hazards within the facility for environmental risks.

**Salary:** $62,400 - $82,900/year

**Minimum Education:** Bachelor's Degree in related field

**Recommended College Coursework:** Environmental Engineering

**Experience Needed:** Mid to High Level
A combination of over 4 years of directly related training and/or experience is required

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Environmental Engineer
2. Energy Engineer
**Biofuel production facilities — operations & management**

### BIOFUEL PLANT OPERATIONS ENGINEER

**Description:** Collect and process information on well-field and plant performance, diagnose well problems and design procedures to fix them.

**Salary:** $70,000 - $80,000/year

**Minimum Education:** Bachelor's degree or higher in Engineering

**Recommended College Coursework:** Resource / Petroleum Engineering, Computer Programming,

**Certification:** Professional Engineer (P.E.)

**Experience Needed:** High Level

15 years experience in geothermal resource engineering as well as petroleum engineering

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Mechanical Engineer
2. Power Generation Development

### BIOFUEL TECHNOLOGY & PRODUCT DEVELOPMENT MANAGER

**Description:** Define, plan and execute research programs that evaluate alternative feedstock and process technologies for biodiesel/biofuel and have near-term commercial potential.

**Salary:** Varies highly based on experience

**Minimum Education:** Bachelor’s Degree in Chemistry, Engineering, or Biology

**Recommended College Coursework:** Chemistry, Alternative Fuels, Engineering, Fuel Production

**Experience Needed:** Mid to High Level

2-5 years of development and commercialization experience

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Biofuel Technology & Product Development Manager

### BIOFUEL PLANT FIELD TECHNICIAN

**Description:** Maintain plant including pump maintenance, safety inspections, record keeping and any other required repairs or maintenance, and perform basic titration, measurements using scales and liquid measuring devices and other lab tests

**Salary:** Expected to be similar to operations and maintenance personnel at other facilities

**Minimum Education:** GED/High School Diploma with experience; Trade School or 30 semester hours without experience

**Recommended College Coursework:** Chemistry, Plant Operations, Metal Fabrication, Industrial Safety and Health

**Certification:** Welding Certification desired

**Experience Needed:** Entry to Mid Level

Up to 2 years at production facility

**Employer Type:** Power Plants/Facilities

**Related Careers:**
1. Biofuel Technology & Product Development Manager

### ALTERNATIVE FUELS POLICY ANALYST & BUSINESS SALES

**Description:** Track alternative fuel legislation and the renewable energy credits market, coordinate with partners in sales and project implementation and help market alternative fuels to consumers.

**Salary:** $60,000/year

**Minimum Education:** Bachelor’s Degree

**Recommended College Coursework:** Marketing & Sales, Economics, Environmental Studies, Alternative Fuels

**Experience Needed:** Mid Level

3-5 years experience in business-to-business sales

**Employer Type:** Private Firms, Plants/Facilities

**Related Careers:**
1. Solar Sales
2. Policy Analyst

### BIODIESEL PRODUCT MANAGER

**Description:** Responsible for gathering market data, and identifying possible consumers of Biodiesel.

**Salary:** $60,000 - $80,000/year

**Minimum Education:** Master's Degree

**Experience Needed:** High Level

5+ years of industrial experience

At least 2 years in biodiesel

**Employer Type:** Private Firms

**Related Careers:**
1. Biofuel Technology & Product Development Manager
### Waste treatment, recycling, and waste reduction

#### RECYCLING COLLECTIONS DRIVER
**Description:** Operate truck to collect recycling from designated locations.

- **Salary:** $9 - $12/hour
- **Minimum Education:** None
- **Certification:** Must have a driver’s license

- **Experience Needed:** Entry Level
- **Employer Type:** Private firms, Government

- **Related Careers:**
  1. Recycling Center Operator

#### RECYCLING CENTER OPERATOR
**Description:** Perform daily operations at a recycling center, including materials processing and customer service, and hand sort and separate recyclable from non-recyclable materials according to established procedures.

- **Salary:** $11 - $18/hour
- **Minimum Education:** None

- **Experience Needed:** Entry Level
- **Employer Type:** Private Firms, Government

- **Related Careers:**
  1. Recycling Collections Driver

#### HAZARDOUS MATERIALS REMOVAL WORKER
**Description:** Identify, remove, transport and dispose of various hazardous materials, including asbestos, lead and radioactive and nuclear materials.

- **Salary:** $20 - $25/hour
- **Minimum Education:** GED/High School Diploma
- **Certification:** 1 – 3 months of training and licensure is required for each material to be handled

- **Experience Needed:** Entry Level
- **Employer Type:** Private Firms, Government, Power Plants/Facilities

- **Related Careers:**
  1. Hazardous Waste Management Specialist
  2. Nuclear Waste Management Engineer

#### HAZARDOUS WASTE MANAGEMENT SPECIALIST
**Description:** Conduct studies on hazardous waste management projects and provide information on treatment and containment of hazardous waste. Provide technical assistance in event of hazardous chemical spill and identify pollutant, determine hazardous impact and recommend corrective action.

- **Salary:** $25 - $35/hour
- **Minimum Education:** Bachelor’s Degree in Chemistry or other Science
- **Recommended College Coursework:** Analytical Chemistry, Organic Chemistry, and Physical Chemistry

- **Experience Needed:** Mid Level
  2 years in a comprehensive environmental, health and safety program
- **Employer Type:** Private Firms, Government, Plants/Facilities

- **Related Careers:**
  1. Hazardous Materials Removal Worker
  2. Nuclear Waste Management Engineer

#### ENVIRONMENTAL TECHNICIAN
**Description:** Identify, develop, and implement best practices in the waste management field. Analyze existing and new business opportunities for cost reductions, new treatment technologies, recycling, alternative use, and waste minimization.

- **Salary:** $25,000 - $30,000/year
- **Minimum Education:** GED/High School Diploma; Associate’s Degree in business, environmental science, or chemistry preferred
- **Certification:** HAZWOPER certification preferred

- **Experience Needed:** Entry to Mid Level
  0-3 years industrial waste-related experience, including experience with RCA, DOT, and OSHA requirements for waste management
- **Employer Type:** Private Firms

#### HOUSEHOLD HAZARDOUS WASTE TECHNICIAN
**Description:** Participate in receiving, identifying, segregating, bulking, and storing hazardous waste from households, and assist in preparing them for shipment in accordance with state and federal regulations.

- **Salary:** $15 - $17/hour
- **Minimum Education:** GED/High School Diploma
- **Recommended College Coursework:** 30 credit-hour in a job related field can be substituted for experience
- **Certification:** HAZPOWER certification and Class A Commercial driver’s license with Hazardous Materials Endorsement (both can be acquired during employment)

- **Experience Needed:** Entry to Mid Level
  One year in hazardous waste management or related field
- **Employer Type:** Private Firms
**SOLID WASTE (ENERGY) ENGINEER/MANAGER**

**Description:** Work on solid waste projects, including planning, operations and technology development.

**Salary:** $76,000 - $84,000/year

**Minimum Education:** Bachelor’s degree in Engineering or Environmental Studies

**Recommended College Coursework:** Engineering, Green building, Cogeneration, Auditing, Water efficiency

**Certification:** Engineer in Training (EIT)

**Experience Needed:** Mid to High Level

2-5 years experience in performing engineering and economic analyses for energy efficiency or solid waste management projects and/or programs

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Wastewater Engineer

---

**HEALTH PHYSICIST**

**Description:** Conduct radiological inspections, investigations, surveys, and data reviews for low-level radioactive waste disposal, by-product waste disposal, and radioactive material management, including storage and processing.

**Salary:** $45,000 - $91,000/year

**Minimum Education:** Bachelor's Degree

**Recommended College Coursework:** Health Physics, Radiological Science, Nuclear Engineering, Physics, Biological Science, Advanced Chemistry, Genetics or Advanced Mathematics; Master’s or Doctoral degree in Health Physics, Radiological Science, Nuclear Medicine, Nuclear Engineering

**Certification:** Certified Health Physicist (CHP) preferred

**Experience Needed:** High Level

5 years experience performing health physics or radiological control and safety functions; less experience required with Master’s Degree or Doctorate

**Employer Type:** Government

---

**SOLID WASTE ENGINEER / MANAGER**

**Description:** Manage solid waste projects, including planning, operations and technology development.

**Salary:** $74,000/year

**Minimum Education:** Bachelor's Degree in Engineering or Environmental Studies

**Recommended College Coursework:** Engineering, Green building, Cogeneration, Auditing, Water efficiency

**Certification:** Engineer in Training (E.I.T.)

**Experience Needed:** Mid to High Level

2-5 years experience in performing engineering and economic analyses for energy efficiency or solid waste management projects and/or programs

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Wastewater Engineer

---

**WASTE REDUCTION CONSULTANT**

**Description:** Help design, implement and monitor a variety of commercial and municipal programs that include waste prevention, recycling, construction & demolition, household hazardous waste, illegal hauling and used oil programs.

**Salary:** $65,000/year

**Minimum Education:** Bachelor’s Degree in Waste Management and/or Energy Efficiency; Master’s Degree or PhD preferred

**Recommended College Coursework:** Waste Reduction, Environmental Studies, Recycling

**Experience Needed:** High Level

5-7 years in related experience

**Employer Type:** Private Firms

**Related Careers:**
1. Environmental Consultant

---

**NUCLEAR WASTE MANAGEMENT ENGINEER**

**Description:** Design, implement, and test systems and procedures to reduce volume and dispose of hazardous waste materials and contaminated objects. Oversee construction, testing and implementation of waste disposal systems and resolve operational problems.

**Salary:** $89,000 - $106,000/year

**Minimum Education:** Bachelor's degree in Nuclear Engineering or a related field

**Recommended College Coursework:** Engineering, Waste Management

**Experience:** High Level

**Employer Type:** Government, Power Plants/Facilities

**Related Careers:**
1. Hazardous Materials Removal Worker
## OPERATIONS MAINTENANCE WORKER FOR WATER SERVICES

**Description:** Responsible for repairing water mains, services, general maintenance and other duties.

**Salary:** $17 - $22/hour

**Minimum Education:** GED/High School Diploma  
**Certification:** Grade II Distribution certification desired or must have or obtain Grade II Distribution certification within 10 months

**Experience Needed:** Entry Level

**Employer Type:** Government, Power Plants/Facilities

**Related Careers:**  
1. Wastewater Engineer

## WATER/WASTEWATER OPERATOR

**Description:** Perform maintenance work and operate equipment in the operation, repair, maintenance, and replacement of water, wastewater, distribution, collections, and composting facilities and systems.

**Salary:** $14 - 21/hour

**Minimum Education:** GED/High School Diploma  
**Certification:** Class C water license in main area of work; Class D license in secondary area of work; one license must be in wastewater management

**Experience Needed:** Mid Level  
One year in water and wastewater operations maintenance or construction; at least two years related experience in plant operations and maintenance preferred

**Employer Type:** Utility, Government

## AQUATIC SCIENTIST

**Description:** Develop and coordinate water quality standards, coordinate and conduct water-quality research projects, and determine and implement regulatory requirements to protect specific water bodies.

**Salary:** $40,000 - $50,000/year

**Minimum Education:** Bachelor's Degree in a natural science; Master's Degree in aquatic science or PhD preferred  
**Recommended College Coursework:** Statistics, Limnology, Ecology, Hydrology, Aquatic Ecology, Ichthyology, Benthic Ecology, Wildlife Biology, Invertebrate Biology, Entomology, Toxicology, Phycolgy, Marine Science, Aquatic Chemistry, Aquatic Pollution, Aquatic Microbiology

**Experience Needed:** Mid to High Level  
Four years experience preferred

**Employer Type:** Government, Non-Profit

## WATER RESOURCE ENGINEER

**Description:** Prepare of environmental documentation for water resources, regulatory program compliance, data management and analysis and field work (e.g., compliance monitoring and site reviews).

**Salary:** $65,000 - $74,000/year

**Minimum Education:** Bachelor's Degree in Environmental Science/Studies, Engineering, Chemistry, Hydrology, or related field  
**Certification:** D.WRE  
Recommended College Coursework: Hydrology, Stormwater, Wastewater, Environmental Studies/Sciences

**Experience Needed:** High Level  
Experience in water quality compliance, permitting, and associated technical document preparation

**Employer Type:** Private Firms, Government

**Related Careers:**  
1. Policy Analyst & Advocate

## CIVIL ENGINEER AGRICULTURE/IRRIGATION/WATER SUPPLY

**Description:** Engineer commercial agricultural operations, and work with irrigation, water supply and other farm systems.

**Salary:** $80,000 - $120,000/year

**Minimum Education:** Bachelor's Degree in Agricultural or Civil Engineering; graduate degree preferred  
**Certification:** Water and wastewater operator certification issued preferred

**Experience Needed:** High Level  
Minimum 5 years work experience in design, construction and operations of large agricultural systems

**Employer Type:** Power Plants/Facilities

**Related Careers:**  
1. Wastewater Engineer

## WATER PRODUCTION AND WATER QUALITY MANAGER

**Description:** Direct operations concerning water supply, water and wastewater treatment, water quality, and laboratory quality control. Ensure portable water and wastewater effluent meets or exceeds state and federal standards.

**Salary:** $55,000 - $76,000/year

**Minimum Education:** Bachelor's Degree in Biology, Chemistry, Environmental or Sanitary Engineering, or a related field.

**Certification:** Water and wastewater operator certification issued preferred

**Experience Needed:** High Level  
Five years managerial experience with two years in water and wastewater operations

**Employer Type:** Government, Utility
# Hydrologist

**Description:** Perform hydrologic data collection, analysis and reporting, construction, operation and maintenance of field instruments and equipment, support of reservoir operations for water supply and flood control.

**Salary:** $40,000 - $58,000/year

**Minimum Education:** Bachelor’s Degree in Hydrology, Water Resources or other science-related field

**Experience Needed:** Mid Level

1-2 years experience with collection, analysis and reporting of hydrologic data; construction, operation and maintenance of field instruments and equipment for hydrologic monitoring; reservoir operations for water supply and flood control.

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Hydrogeologist

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# Senior Hydrologist

**Description:** Direct all field data collection, analysis, reservoir operations and maintenance of field instruments and equipment. Perform hydrologic data analysis and computer modeling for flood control, water supply and river management.

**Salary:** $55,000 - $75,000/year

**Minimum Education:** Bachelor’s Degree in Hydrology, Water Resources or other science-related field

**Certification:** Texas State Board of Professional Geoscientists license preferred

**Experience Needed:** High Level

5-7 years performing hydrologic and hydraulic data collection and analysis

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Hydrogeologist

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# Water Conservation Coordinator

**Description:** Assist with coordination of water conservation incentive programs. Administer raw water customer water conservation and drought contingency plans, including tracking of plan updates and implementation. Coordinate new water-saver awards program. Maintain and track inventory of public outreach materials and other conservation supplies.

**Salary:** $32,000 - $66,000/year

**Minimum Education:** Bachelor’s Degree in Business, Environmental Science, Planning or relevant field

**Experience Needed:** Mid Level

1-2 years experience in conservation, program planning, customer service, managing data, using electronic databases, and/or developing reports.

**Employer Type:** Private Firms, Government, Power Plants/Facilities

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# Water Quality Coordinator

**Description:** Review on-site sewage facilities (OSSF) plans and site conditions. Review plans and issue permits to ensure compliance with rules, standards, and policies. Inspect OSSF projects for rule and permit compliance. Assist customers in understanding technical requirements of rules, standards, and policies.

**Salary:** $35,000 - $50,000/year

**Minimum Education:** Bachelor’s Degree in basic or applied science or Engineering.

**Certification:** Professional Engineer or Registered Sanitarian.

**Experience Needed:** Mid Level

1-2 years in field inspection and site evaluation on OSSF systems. Experience in design plan review and permitting.

**Employer Type:** Private Firms, Government, Power Plants/Facilities

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# Irrigation Water Conservation Coordinator

**Description:** Provide expert counsel and information regarding outdoor water conservation with emphasis in the areas of landscape irrigation, plants, soil, and landscape design. Develop and implements water conservation programs. Foster water conservation awareness to developers, builders, and the general public. Act as water conservation advocate at regulatory meetings and functions. Collaborate with other organizations and entities on water conservation programs. Provide input on policies, rules, and strategic planning related to conservation.

**Salary:** $32,000 - $50,000/year

**Minimum Education:** Bachelor’s Degree in Horticulture, Landscape Agriculture, Environmental Management and/or Science or other relevant field; Master’s Degree in related field preferred

**Certification:** Texas Irrigator’s License preferred

**Experience Needed:** High Level

5-7 years in water conservation, design and/or installation of resource efficient landscapes and irrigation planning.

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Landscape Architect
### Wastewater management

#### WASTEWATER PLANT CIVIL ENGINEER
**Description:** Project manager for wastewater design and implementation, responsible for all facets of hydraulic modeling and pipeline design.

- **Salary:** $74,000 - $82,000/year
- **Minimum Education:** Bachelor's Degree in Civil Engineering
- **Recommended College Coursework:** Civil Engineering, Mechanical Engineering, Wastewater management
- **Certification:** Professional Engineer (PE.)
- **Experience Needed:** High Level
- **Employer Type:** Private Firms, Power Plants/Facilities
- **Related Careers:**
  1. Civil Engineer
  2. Wastewater Plant Operator

#### WASTEWATER ENGINEER IN INDUSTRIAL FACILITIES
**Description:** Administer the stormwater/wastewater program for major industrial facilities. Manage the implementation of the Spill Prevention Control and Countermeasure Plan (SPCC) and the Stormwater Pollution Prevention Plan (SWPPP), and complete the Air Emissions Report and lead the new Greenhouse Gas Program.

- **Salary:** $75,000 - $100,000/year
- **Minimum Education:** Bachelor's Degree in Chemical, Petroleum, Mechanical or Environmental Engineering
- **Recommended College Coursework:** Chemistry, Mechanical Engineering, Water/Waste Water treatment
- **Experience Needed:** High Level
- **Employer Type:** Plants/Facilities
- **Related Careers:**
  1. Environmental Engineer
  2. Wastewater treatment operator

### Soil conservation and forestry

#### FORESTRY CONSERVATION WORKER
**Description:** Develop, maintain and protect forest, forested areas, and woodlands, and build erosion and water control structures and leaching for forest soil.

- **Salary:** $15 - $22/hour
- **Minimum Education:** HS Diploma/GED; Associate's Degree preferred
- **Recommended College Coursework:** Forestry, Ecology, Natural Resources
- **Experience Needed:** Entry Level
- **Employer Type:** Private Firms, Government
- **Related Careers:**
  1. Environmental Scientist

#### SOIL CONSERVATION TECHNICIAN
**Description:** Provide technical assistance to land users in planning and applying soil and water conservation practices, utilizing basic engineering and surveying knowledge of agricultural and related sciences.

- **Salary:** $16 - $24/hour
- **Minimum Education:** Bachelor's Degree in field of specialty or equivalent education and experience
- **Recommended College Coursework:** Agriculture, Agronomy, Soil Conservation, Hydrology
- **Experience Needed:** Mid Level
- **Employer Type:** Private firms
- **Related Careers:**
  1. Soil Conservationist
  2. Forest Conservation Worker

#### SOIL CONSERVATIONIST
**Description:** Deal with soil erosion control, moisture conservation and sound land use, and plan soil management practices such as reforestation, terracing and crop rotation.

- **Salary:** $23 - $32/hour
- **Minimum Education:** Bachelor's Degree in field of specialty
- **Recommended College Coursework:** Agronomy, Soil Science, Forestry, Agriculture, Environmental Studies
- **Experience Needed:** Mid Level
- **Employer Type:** Private Firms
- **Related Careers:**
  1. Hydrogeologist
  2. Environmental Scientist

#### FORESTRY CONSERVATION CONSULTANT
**Description:** Advise on forest and woodland ecosystem management activities, including matters relating to the development prescriptions to support threatened, endangered and special status plants and animals, development of special inventory protocols.

- **Salary:** $20,000 - $42,000/year
- **Minimum Education:** Associate's Degree in Forestry; Bachelor's Degree preferred
- **Recommended College Coursework:** Forest Biology, Management of Renewable Resources, Forests Resource Measurements and Inventory
- **Experience Needed:** Mid to High Level
- **Employer Type:** Private Firms, Government
- **Related Careers:**
  1. Forestry Supervisor
  2. Forestry Conservation Worker
### Urban Renewal Manager

**Description:** Recommend governmental measures affecting land use, public utilities, community facilities and housing and transportation to control and guide community development and urban renewal.

- **Salary:** $73,200 - $89,200/year
- **Minimum Education:** Master's Degree in Urban Planning, Civil Engineering, Environmental Studies, or related field
- **Recommended College Coursework:** Civil Engineering, Urban Planning, Land Use
- **Experience Needed:** High Level
- **Employer Type:** Private Firms, Government

**Related Careers:**
1. Civil Engineer
2. Urban Planner

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### Environmental Planner

**Description:** Assist in a wide range of projects including environmental impact reports, environmental impact statements, land use planning and environmental permit process.

- **Salary:** $40,000 - $65,000/year
- **Minimum Education:** Bachelor's Degree in Environmental Studies or Environmental Science; Master's Degree preferred
- **Recommended College Coursework:** Social Science, Urban and Rural Land Use, Socioeconomics, Environmental Studies
- **Experience Needed:** Mid to High Level
  - 3-4 years experience in related science or planning field

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Urban Planner
2. Restoration Planner

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### Restoration Planner

**Description:** Collaborate with field and biology staff to oversee the implementation of restoration projects and to develop new projects. Accurately process and synthesize complex scientific data into practical, on-the-ground strategies for restoration, monitoring, and management.

- **Salary:** $73,000 - $84,000/year
- **Minimum Education:** Master's Degree in related discipline
- **Recommended College Coursework:** Ecology, Biology, Environmental Science, Landscape Architecture, and Planning
- **Experience Needed:** Mid to High Level
  - 2-4 years relevant work experience including environmental compliance and permitting

**Employer Type:** Private Firms, Government

**Related Careers:**
1. NEPA Analyst/Natural Resource Planner
2. Forestry Supervisor

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### Forestry Supervisor

**Description:** Deal with forest management, urban forests, wildlife management, conservation and reclamation of land for forestry use.

- **Salary:** $45,000 - $57,000/year
- **Minimum Education:** Bachelor's Degree in Forestry Management
- **Recommended College Coursework:** Forestry, Math, Science, Forest Resource Management
- **Experience Needed:** Mid Level
  - 2-3 years related experience as licensed forester
- **Employer Type:** Private Firms, Government

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### Environmental Planning

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- **Experience Needed:** Mid Level
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- **Employer Type:** Private Firms, Government

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- **Recommended College Coursework:** Social Science, Urban and Rural Land Use, Socioeconomics, Environmental Studies
- **Experience Needed:** Mid to High Level
  - 3-4 years experience in related science or planning field

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Urban Planner
2. Restoration Planner
PROGRAM MANAGER ENVIRONMENTAL CONSTRUCTION

**Description:** Planning, staffing, schedule, budget, quality control, safety and coordination of subcontractors and internal support staff for environmental construction projects, with the direction and supervision of more senior staff as required.

**Salary:** $72,000 - $85,000/year

**Minimum Education:** Bachelor’s Degree in Engineering

**Recommended College Coursework:** Civil Engineering, Environmental Construction

**Experience Needed:** High Level

15 years related experience

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Civil Engineer

ENVIRONMENTAL TECHNICIAN

**Description:** Develop methods and devices used in the prevention, control and correction of environmental hazards. Work is highly specialized (e.g., collect water samples from streams and lakes, raw, semi-processed or processed water, industrial waste water, or water from other sources to assess pollution problems).

**Salary:** $40,000 - $53,000/year

**Minimum Education:** Associate’s Degree in an Engineering technology

**Recommended College Coursework:** Environmental science, Engineering, Mathematics or Chemistry

**Experience Needed:** Mid Level

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Renewable Energy Consultant
2. Environmental Scientist

ENVIRONMENTAL INVESTIGATOR

**Description:** Conduct advanced and highly complex criminal investigations involving environmental programs such as hazardous waste, water pollution, petroleum storage tanks, and municipal solid. Evaluate, analyze, and summarize evidence and investigative findings, and recommend actions.

**Salary:** $34,000 - $60,000/year

**Minimum Education:** Bachelor’s Degree in a natural or physical science, Engineering, Environmental Studies, or related field; Master’s Degree in Environmental Science, Engineering, or related field preferred.

**Experience Needed:** High Level

6 years experience in environmental activities; experience conducting criminal investigations preferred

**Employer Type:** Government, Private Firms, Non-Profit

SENIOR ENVIRONMENTAL CONSULTANT

**Description:** Manage all compliance requirements during pre-construction, construction and commercial operation phases of project, including environmental and building requirements.

**Salary:** $71,000 - $90,000/year

**Minimum Education:** Bachelor’s Degree in Environmental Science, Engineering, Chemistry, Biology or related field

**Recommended College Coursework:** Environmental Sciences, Natural Science, Engineering

**Experience Needed:** Mid to High Level

Minimum 3 years regulatory compliance experience at power plants, industrial or construction sites

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Renewable Energy Consultant

AIR QUALITY SPECIALIST & ENFORCEMENT OFFICER

**Description:** Provide expertise on subject matter to help identify and resolve air quality issues, and assess pollution control technologies for achieving air emissions compliance.

**Salary:** $30 - $37/hour

**Minimum Education:** Bachelor’s Degree in Engineering, Science, or related field

**Recommended College Coursework:** Engineering, Chemistry, Climate & Air, Pollution Control, State and Federal Air Quality Standards, Environmental Science

**Certifications:** Desired: CHMM, REA, AHERA, CPEA, REHS, HZWOPR

**Experience Needed:** Mid Level

Minimum 1-2 years of experience in air quality/environmental issues

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Renewable Energy Consultant
2. Environmental Scientist
### AIR RESOURCES ENGINEER

**Description:** Develop control measures and other strategies to reduce emissions of greenhouse gases from stationary and mobile sources.

**Salary:** $55,000 - $85,000/year

**Minimum Education:** Bachelor's Degree in Environmental Science, Engineering, Chemistry, Biology or related field

**Recommended College Coursework:** Environmental Sciences, Natural Science, Engineering

**Experience Needed:** Mid to High Level

Minimum 3 years regulatory compliance experience at power plants, industrial or construction sites

**Employer Type:** Private Firms, Power Plants/Facilities

**Related Careers:**
1. Renewable Energy Consultant

### AIR QUALITY CONTROL ENGINEER

**Description:** Conduct air quality analyses and permitting efforts and implement environmental compliance management systems and processes.

**Salary:** $35,000 - $90,000/year

**Minimum Education:** Bachelor's Degree in Chemical Engineering or a technical discipline

**Recommended College Coursework:** Chemistry, Chemical Engineering, Engineering, Air Quality/Pollution

**Experience Needed:** High Level

Minimum 5 years experience in air permitting plus knowledge of federal/state environmental programs

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Air Quality Specialist

### AIR POLLUTION SPECIALIST

**Description:** Investigate local government and land use activities, develop protocols for estimating greenhouse gas emissions, develop community greenhouse gas inventories and evaluate greenhouse gas reduction benefits from green buildings.

**Salary:** $55,000 - $74,000/year

**Minimum Education:** Bachelor's Degree in Chemistry, Chemical Engineering, or a Physical Science

**Recommended College Coursework:** Climate Change, Emissions Accounting, Green Building, Chemistry

**Experience Needed:** Mid to High Level

**Employer Type:** Private Firm, Government

**Related Careers:**
1. Air Resources Engineer

### WATER RESOURCE CONSULTANT

**Description:** Deals with broader issues of water management and discharge, including flooding, ecosystem needs, distributions and marketing.

**Salary:** $72,000 - $92,000/year

**Minimum Education:** Bachelor of Science in related field; Master's Degree preferred

**Recommended College Coursework:** Environmental Science, Hydrology, Wastewater, Engineering, Permitting, Land Use

**Experience Needed:** Mid to High Level

3-5 years experience with water quality issues

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Water Resource Engineer

### WATER QUALITY CONSULTANT - WATER/WASTEWATER ENGINEER

**Description:** Deal with issues surrounding water quality discharge permitting.

**Salary:** $72,000 - $92,000/year

**Minimum Education:** Bachelor of Science in related field; Master's Degree preferred

**Recommended College Coursework:** Hydrology, Wastewater, Engineering, Permitting, Land Use

**Certification:** Professional Engineer (P.E.) preferred

**Experience Needed:** High Level

3-5 years experience with water quality issues

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Wastewater Treatment

### WASTE REDUCTION CONSULTANT/ ENERGY EFFICIENCY EXPERT

**Description:** Design, implement and monitor a variety of commercial and municipal programs that include energy efficiency, waste prevention, recycling, construction & demolition, household hazardous waste, illegal hauling and used oil programs

**Salary:** $60,000 - $80,000/year

**Minimum Education:** Bachelor's Degree in Waste Management and/or Energy Efficiency; Master's Degree or Doctorate preferred

**Recommended College Coursework:** Waste Reduction, Environmental Studies, Recycling

**Experience Needed:** High Level

5-7 years in related experience

**Employer Type:** Private Firms

**Related Careers:**
1. Environmental Consultant
### Environmental Sampling Technician

**Description:** Receive, check, log, bottle and ship samples, and analyze the samples for trace level organic, inorganic, radiological contaminants and air emissions.

**Salary:** $16 - $22/hour

**Minimum Education:** HS Diploma/GED; Bachelor’s of Science preferred

**Recommended College Coursework:** Sciences, Environmental Studies

**Certification:** HAZWOPER, often provided by employer

**Experience Needed:** Entry Level

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Environmental Scientist

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### National Environmental Policy Act (NEPA) Analyst/Natural Resource Planner

**Description:** Assist business development efforts, identify potential opportunities, and identify resource sections for NEPA.

**Salary:** $38,000 - $60,000/year

**Minimum Education:** Bachelor’s Degree in Natural Resource Management, Environmental or Land Use Planning, Biology, Environmental Science, Cultural Resources, GIS, or related field.

**Experience Needed:** Mid to High level

Minimum of 3-5 years as NEPA resource author and analyst in one or more disciples such as wildlife biology, vegetation, wetlands, land use, recreation, special designations, cultural resources, water resources, air noise, and/or socio-economics

**Employer Type:** Private Firms, Government, Power Plants/Facilities

**Related Careers:**
1. Restoration Planner

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### GIS Specialist

**Description:** Develop and use advanced Geographic Information Systems methodologies and customized software applications in the fields of floodplain analysis, storm water management, surface water quality and wetland migration banking and restoration.

**Salary:** $35,000 - $85,000/year

**Minimum Education:** Associate Degree; Bachelor’s Degree in Geography

**Recommended College Coursework:** GIS courses, Water/Wastewater Treatment

**Experience Needed:** High Level

5-7 years in related field

**Employer Type:** Private Firms, Government, Power Plant/Facilities

**Related Careers:**
1. Environmental Engineer

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### Engineering Geologist

**Description:** Conduct geologic field investigations on a wide range of public and private projects involving seismic evaluations, landslides, and subsurface soil, rock and water conditions for dams, buildings, water and waste water treatment facilities, transportation projects and remedial actions.

**Salary:** $36,000 - $93,000/year

**Minimum Education:** Bachelor's Degree in Engineering Geology; Master's Degree in Engineering Geology preferred

**Recommended College Coursework:** Soil, Soil Gas, Groundwater, Environmental Studies, Engineering, and Waste Management

**Certification:** Engineering Geologist (EG) Cert., OSHA 40-hour HAZWOPER training desirable

**Experience Needed:** High Level

Minimum 5 years experience as an engineering geologist

**Employer Type:** Private Firms, Government

**Related Careers:**
1. Soil Conservationist

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### Biological – Marine/Fisheries

**Description:** Plan and conduct evaluations of factors affecting fish populations and provide oversight of fisheries monitoring programs.

**Salary:** $38,000 - $60,000/year

**Minimum Education:** Bachelor's Degree in Biology or related field

**Recommended College Coursework:** Biology, Marine Biology

**Experience Needed:** Mid to High Level

**Employer Type:** Private Firms

**Related Careers:**
1. Environmental Scientist
### Environmental Research and Monitoring

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Description</th>
<th>Salary</th>
<th>Minimum Education</th>
<th>Recommended College Coursework</th>
<th>Experience Needed</th>
<th>Employer Type</th>
<th>Related Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLIMATOLOGIST</strong></td>
<td>Conduct climate change research and data analysis. Collect and synthesize data derived from pollution emission measurements, atmospheric monitoring, meteorological and mineralogical information, and soil or water samples.</td>
<td>$38,000 - $85,000/year</td>
<td>Bachelor's Degree in scientific or engineering discipline; Master's Degree or PhD preferred</td>
<td>Advanced study in Environmental Sciences</td>
<td>High Level</td>
<td>Private Firms, Government, Treatment Plants/Facilities</td>
<td>1. Environmental Engineer</td>
</tr>
<tr>
<td><strong>ECONOMIST</strong></td>
<td>Conduct primary and secondary research to support the formulation of analytical solutions, the development of economic models and the interpretation of results in the areas of transportation, the environment, energy, economic development and finance.</td>
<td>$38,000 - $85,000/year</td>
<td>Bachelor's Degree in Economics; Master's Degree preferred</td>
<td>Economics, Environmental Studies, Energy Efficiency</td>
<td>High Level</td>
<td>Private Firms</td>
<td></td>
</tr>
<tr>
<td><strong>ENVIRONMENTAL SCIENTIST</strong></td>
<td>Conduct research to identify and abate/eliminate sources of pollutants that affect people, wildlife and their environments. Collect and synthesize data derived from pollution emission measurements, atmospheric monitoring, meteorological and mineralogical information and soil or water samples. Analyze data to assess pollution problems, establish standards and develop pollution control programs.</td>
<td>$33,000 - $85,000/year</td>
<td>Bachelor's Degree in scientific or engineering disciplines; Master's Degree or PhD preferred</td>
<td>Advanced study in Environmental Sciences</td>
<td>High Level</td>
<td>Private Firms, Government, Treatment Plants/Facilities</td>
<td>1. Hydrogeologist 2. Biologist</td>
</tr>
<tr>
<td><strong>CHEMIST</strong></td>
<td>Perform various testing and analysis on chemical compounds, from air toxics to biofuels.</td>
<td>$37,000 - $70,000/year</td>
<td>Bachelor's Degree in Chemistry; Master's Degree or PhD preferred</td>
<td>Chemistry, Organic Chemistry, Chemical Engineering</td>
<td>High Level</td>
<td>Private Firms, Governments, Power Plants/Facilities</td>
<td>1. Biologist 2. Environmental Scientist</td>
</tr>
<tr>
<td><strong>ENVIRONMENTAL RESEARCH MANAGER</strong></td>
<td>Analyze data to interpret correlation between property development and physical or health hazards, and prepare reports for city, state and federal authorities for permits.</td>
<td>$35,000 - $80,000/year</td>
<td>Master's Degree in Chemical Engineering or Chemistry, Environmental Science, Atmospheric Science</td>
<td>Chemical Engineering, Chemistry, Policy, Public Health</td>
<td>Mid Level</td>
<td>Private Firms, Government</td>
<td>1. Environmental Scientist</td>
</tr>
</tbody>
</table>
## Advocacy

### Conservation Policy Analyst & Advocate

**Description:** Plan and manage conservation programs, including program development, project implementation, budget management, fundraising and community relations, and provide high-level oversight for restoration programs.

**Salary:** $28,000 - $53,000/year

**Minimum Education:** Bachelor’s Degree in Environmental Studies or Science, Environmental Policy, Conservation Biology or another field related to natural resources conservation

**Recommended College Coursework:** Environmental studies, Ecology, Natural Resources, Conservation

**Experience Needed:** Entry to Mid Level
3 years experience in wildlife conservation policy and advocacy

**Employer Type:** Private Firms

**Related Careers:**
1. Environmental Scientist
2. Government Analyst

### Climate Change Policy Specialist & Advocate

**Description:** Develop and advance a policy strategy to promote the creation of a long-term price signal for the reduction of global emissions of greenhouse gases, including financial incentives to prevent deforestation and restore valuable forest habitats.

**Salary:** $40,000 - $60,000/year

**Minimum Education:** Master’s Degree in International Relations, Public Policy, Forestry, Energy Resource Management, Environmental Economics or related field

**Recommended College Coursework:** Forestry, Public Policy, Resource Management, Air Quality, Economics

**Experience Needed:** High Level
6 years related experience

**Employer Type:** Private Firms

**Related Careers:**
1. Policy Analyst
2. Government Analyst

### Water Resource Policy Specialist & Advocate

**Description:** Conduct hydrogeologic and hydrologic analysis for environmental and water resources projects, including computer simulations of water resources, evaluations of how to best plan for the future availability of water resources, surface and subsurface water quality modeling, development of input values that go into water supply and water quality models, developing environmental management and decision support systems and technical report writing.

**Salary:** $30,000 - $50,000/year

**Minimum Education:** Master’s Degree in Environmental Studies, Science or Environmental Engineering

**Recommended College Coursework:** Environmental Studies, hydrology, Engineering

**Experience Needed:** High Level

**Employer Type:** Private Firms

**Related Careers:**
1. Hydrogeologist
2. Government Scientist
Apprenticeship Information

An apprenticeship is an entry-level job that pays the employee while they learn a skilled craft or trade. Most of the job training occurs during the working hours, though classroom training may also be required. The apprentice typically works alongside a highly experienced teacher to perform jobs and installations. The duration of the apprenticeship is typically between three and five years based on the skills and trade being learned. At the start of the apprenticeship, the worker may earn $10 to $20 per hour. Once completed, the apprentice-turned-craftsman can earn more than $30 an hour.

Most apprenticeship programs are either run through a labor union, large company like an electric utility, or a local college. Typically, applicants to apprenticeship programs must be 18 years of age, in good physical health, possess a high school diploma or a GED, and able to read, write, and speak English.

Apprenticeships recognized and registered by the U.S. Department of Labor Office of Apprenticeship can be found at: http://oa.doleta.gov. Data on the site is updated monthly and can be searched by state and county. The Texas Workforce Commission apprenticeship information can be found at: http://www.twc.state.tx.us/svcs/apprentice.html.

Green Jobs Placement Assistance

The Texas Workforce Commission (TWC) is a state agency that maintains a network of more than 240 Workforce Centers and satellite offices. TWC is represented on a regional level by 28 local workforce boards, which administer employment services, including trade-affected workers and training programs. Workforce Center locations can be found at: http://www.twc.state.tx.us/dirs/wdas/wfc_list.pdf

TWC also maintains an online job search tool, Work in Texas, which can be found at: http://www.workintexas.com.

Additional information for Austin, Dallas/Fort Worth, Houston and San Antonio can be found in the regional sections of this Guidebook.
Texas Green Jobs at Academic Institutions

Texas is home to world-class educational institutions where students can learn valuable skills that prepare them to enter the workforce. Community colleges, trade schools, four-year universities and graduate schools all offer excellent programs to individuals looking to learn about and advance in the green economy. A sound education that gives an individual a specialized skill set can make it easier to be hired and promoted at the company or in the field of choice. Surveys have shown that employers in the green economy will look for educational preparation in math, science and technology, in addition to good problem solving skills and hands-on training. Also, just as in any other field, there will always be a need for individuals with advanced training, including the Master's level or higher.

Four-year colleges, universities and graduate schools

Most four-year colleges and universities offer a wide range of basic and advanced courses within bachelor's level and higher degree programs to prepare students to work in the green economy. Environmental studies and science programs have been training workers in environmental resource management fields, including energy, waste and water, for decades. Coursework in chemistry, biology, engineering, math, geology and environmental science has continued to be a main emphasis of the required curriculum. For more information on these schools and the programs they offer, many resources are available on the Internet, through career services offices at high schools and colleges, or by contacting the schools directly. Due to the breadth of such coursework offerings and the limited scope of this Guidebook, academic programs at four-year institutions are not included.

Trade schools and programs

Texas is home to many specialty schools and institutions that offer coursework tailored to meet the requirements of a specific job class or field. These programs allow students the flexibility to complete a certificate or degree program in the field of their choosing. However, students may first want to identify the type of green job they desire and specifically tailor their concentration to meet the demands of that job.

Community colleges

The network of over 50 Texas community colleges offers a diverse array of low-cost two-year degree and certificate programs to prepare students for green jobs. In addition to the traditional sciences, many two-year schools offer specialty degree and apprenticeship programs designed to fill specific green jobs niches. Community colleges are also a good source for continuing education to meet specific green economic sector demands. A list of all the Texas community colleges with identified specialty programs beyond the traditional sciences of chemistry, biology, math, physics, geography and geology is included on the following pages. Greater detail of certain major metropolitan area colleges is included in the regional section of this Guidebook.
## Green Job Educational Programs at Texas Community Colleges

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<tr>
<th>COMMUNITY COLLEGE</th>
<th>GREEN JOB PROGRAM CONCENTRATION</th>
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</thead>
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<tr>
<td>Alvin</td>
<td>Conservation, Forestry</td>
</tr>
<tr>
<td>Amarillo</td>
<td>Automotive Technology, Environmental Science, Electronics Technology, Fire and Environmental Technology, Manufacturing Technology</td>
</tr>
<tr>
<td>Angelina</td>
<td>Automotive Technology, Diesel Technology, Electrical Maintenance, Electromechanical Technology, Electronics Technology, Welding</td>
</tr>
<tr>
<td>Austin</td>
<td>See Austin section (page 60)</td>
</tr>
<tr>
<td>Central Texas</td>
<td>Automotive Mechanic/Technician, Diesel Engine Mechanic and Repairer, Engineering, Environmental Science, Heating and Air Conditioning, Maintenance Technology, Welding</td>
</tr>
<tr>
<td>Cisco</td>
<td>Agriculture, Automotive Technology, Industrial Technology, Welding</td>
</tr>
<tr>
<td>Coastal Bend</td>
<td>Automotive Technology, Engineering, Oil and Gas Technology, Welding</td>
</tr>
<tr>
<td>College of the Mainland</td>
<td>Geographic Information Systems, Petrochemical Process Technology, Welding Technology</td>
</tr>
<tr>
<td>Collin</td>
<td>See Dallas/Fort Worth section (page 64)</td>
</tr>
<tr>
<td>Dallas County</td>
<td>See Dallas/Fort Worth section (page 63)</td>
</tr>
<tr>
<td>Frank Phillips</td>
<td>Air Conditioning/Heating, Farm and Ranch Management, Industrial Electrical Technology, Industrial Manufacturing Technology, Welding Technology</td>
</tr>
<tr>
<td>Galveston</td>
<td>None</td>
</tr>
<tr>
<td>Grayson County</td>
<td>Engineering, Heating, Air Conditioning and Refrigeration Technology, Welding</td>
</tr>
<tr>
<td>Houston</td>
<td>See Houston section (page 66)</td>
</tr>
<tr>
<td>Howard</td>
<td>Building Construction Technology, Drafting Technology, Engineering, Farm and Ranch Management, Industrial Production, Welding</td>
</tr>
<tr>
<td>Green Job Educational Programs at Texas Community Colleges</td>
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<td>-----------------------------------------------------------</td>
<td></td>
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<tr>
<td><strong>Laredo</strong></td>
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<tr>
<td>Building Trades (Carpentry Technology, Electrical Technology, Heating, Air Conditioning and Refrigeration), Plumbing Technology, Welding</td>
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<tr>
<td><strong>Lee</strong></td>
<td></td>
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<tr>
<td><strong>Lone Star</strong></td>
<td></td>
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<tr>
<td>See Houston section (page 67)</td>
<td></td>
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<tr>
<td><strong>Midland</strong></td>
<td></td>
</tr>
<tr>
<td>Air Conditioning, Heating and Refrigeration Technology, Automotive Technology, Building Trades Technology, Welding Technology</td>
<td></td>
</tr>
<tr>
<td><strong>Navarro</strong></td>
<td></td>
</tr>
<tr>
<td>Corsicana: Pre-Engineering, Oil and Gas Technology; Mexia: Power Plant Operations and Maintenance; Waxahachie: Welding</td>
<td></td>
</tr>
<tr>
<td><strong>North Central</strong></td>
<td></td>
</tr>
<tr>
<td>Bowie: Oil and Gas Production Technology; Corinth: Drafting Technology; Gainesville: Drafting Technology, Farm and Ranch Management, Horticulture Management</td>
<td></td>
</tr>
<tr>
<td><strong>Northeast Texas</strong></td>
<td></td>
</tr>
<tr>
<td>Automotive Technician, Diesel Mechanic, Electrical Occupations, Farm and Ranch Management, Engineering, Sustainable Agriculture and Biofuels Technology (in development), Welding</td>
<td></td>
</tr>
<tr>
<td><strong>Odessa</strong></td>
<td></td>
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<tr>
<td><strong>Panola</strong></td>
<td></td>
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<tr>
<td>Environmental Technology, Industrial Technology, Petroleum Technology, Welding</td>
<td></td>
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<tr>
<td><strong>Paris</strong></td>
<td></td>
</tr>
<tr>
<td>Agriculture, Air Conditioning and Refrigeration, Drafting and Computer-Aided Design, Electromechanical Technology, Engineering, Welding</td>
<td></td>
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<tr>
<td><strong>Ranger</strong></td>
<td></td>
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<tr>
<td>Welding</td>
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<tr>
<td><strong>San Jacinto</strong></td>
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<tr>
<td><strong>South Plains</strong></td>
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<tr>
<td><strong>South Texas</strong></td>
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<tr>
<td><strong>Southwest Texas</strong></td>
<td></td>
</tr>
<tr>
<td>Eagle Pass: Diesel Technology; Uvalde: Air Conditioning and Refrigeration, Automotive Technology, Welding, Wildlife Management</td>
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</tr>
<tr>
<td><strong>Tarrant County</strong></td>
<td></td>
</tr>
<tr>
<td>See Dallas/Fort Worth section (page 64)</td>
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</tr>
<tr>
<td><strong>Texarkana</strong></td>
<td></td>
</tr>
<tr>
<td>Agriculture, Automotive Technology, Diesel Technology, Horticulture</td>
<td></td>
</tr>
</tbody>
</table>
### Green Job Educational Programs at Texas Community Colleges

<table>
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<tbody>
<tr>
<td>(UT-Brownsville)</td>
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<tr>
<td>Texas State Technical College</td>
<td>See below (page 57)</td>
</tr>
<tr>
<td>Trinity Valley</td>
<td>Agriculture, Automotive Technology, Biology (Native Habitat Zone), Drafting and Design, Ranch Management, Welding; Palestine: Horticulture</td>
</tr>
<tr>
<td>Tyler</td>
<td>Agriculture, Air Conditioning, Automotive Technology, Engineering, Engineering Design Technology, Environmental Science, Forestry, Horticulture, Meteorology, Surveying and Mapping Technology, Welding Technology</td>
</tr>
<tr>
<td>Vernon</td>
<td>Agricultural Farm and Ranch Management, Automotive Technology, Heating, Ventilation and Air Conditioning, Industrial Automation, Welding</td>
</tr>
<tr>
<td>(The) Victoria</td>
<td>Electrical, Engineering, Heating, Ventilation and Air Conditioning, Industrial Process Technology, Welding</td>
</tr>
<tr>
<td>Weatherford</td>
<td>Computer-Aided Drafting, Electrical, Geographic Information Systems, Heating, Ventilation and Air Conditioning, Welding</td>
</tr>
<tr>
<td>Western Texas</td>
<td>Agriculture, Electrical Lineman Technology, Geology/Meteorology/Oceanography, Nursery-Landscape Management, Welding</td>
</tr>
</tbody>
</table>

Most community colleges also offer continuing education programs that allow students to receive certification in a specialty or learn a new skill. The following table includes continuing education courses at certain community colleges that were offered at publishing time of this Guidebook. This list is not comprehensive, as the nature of continuing education means that new courses can be introduced and made available in a relatively short time frame.

Students interested in continuing education courses along the lines of those presented here should contact their local community college for the latest course offerings. Also, continuing education at community colleges in Austin, Dallas/Fort Worth, Houston and San Antonio are listed in the regional sections beginning on page 56.
## Continuing Education Opportunities at Community Colleges

<table>
<thead>
<tr>
<th>COMMUNITY COLLEGE</th>
<th>CONTINUING EDUCATION COURSE OFFERINGS</th>
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</thead>
<tbody>
<tr>
<td>Alamo</td>
<td>See San Antonio section (page 69)</td>
</tr>
<tr>
<td>Austin</td>
<td>See Austin section (page 60)</td>
</tr>
<tr>
<td>Blinn</td>
<td>Heating, Ventilation and Air Conditioning, Electrician, Construction Technology, Welding</td>
</tr>
<tr>
<td>Brazosport</td>
<td>Safety, Health and Environmental Management Certification</td>
</tr>
<tr>
<td>College of the Mainland</td>
<td>Geographic Information Systems, Welding</td>
</tr>
<tr>
<td>Collin</td>
<td>See Dallas/Fort Worth section (page 64)</td>
</tr>
<tr>
<td>Dallas County</td>
<td>See Dallas/Fort Worth section (page 63)</td>
</tr>
<tr>
<td>Del Mar</td>
<td>National Electric Code</td>
</tr>
<tr>
<td>Frank Phillips</td>
<td>Electrical Update, Welding</td>
</tr>
<tr>
<td>Galveston</td>
<td>Welding</td>
</tr>
<tr>
<td>Grayson County</td>
<td>Commercial Refrigeration, Drafting, Electricity, Gas and Electric Heating, International Code Council Testing, Welding</td>
</tr>
<tr>
<td>Houston</td>
<td>See Houston section (page 66)</td>
</tr>
<tr>
<td>Kilgore</td>
<td>Electric Power Technology Certification, Electrical, Industrial Electrical Technology Certification, Petroleum Technology, Welding</td>
</tr>
<tr>
<td>Lee</td>
<td>Electrical Technology, Pipefitting Technology, Welding Technology</td>
</tr>
<tr>
<td>Lone Star</td>
<td>See Houston section (page 67)</td>
</tr>
<tr>
<td>Midland</td>
<td>Air Conditioning, Heating and Refrigeration Technology, Electrical Apprentice Training</td>
</tr>
<tr>
<td>North Central Texas</td>
<td>Bowie: Drafting; Corinth: Drafting; Gainesville: Drafting, Electrical, Heating, Ventilation and Air Conditioning, Horticulture, Plumbing, Refrigeration, Welding</td>
</tr>
<tr>
<td>Northeast Texas</td>
<td>Building Analyst Certificate</td>
</tr>
<tr>
<td>Odessa</td>
<td>Air Conditioning and Maintenance Technology, Building Construction Technology, Drafting Technology, Electrician, Refrigeration, Welding</td>
</tr>
<tr>
<td>Panola</td>
<td>Commercial Refrigeration, Petroleum Industry, Welding</td>
</tr>
<tr>
<td>San Jacinto</td>
<td>Automotive Technology, Diesel Technology, Electrical Technology, Heating, Ventilation and Air Conditioning, Welding</td>
</tr>
<tr>
<td>South Texas</td>
<td>Automotive Technology, Electricity, International Building Codes, Refrigeration, Welding</td>
</tr>
<tr>
<td>Tarrant County</td>
<td>See Dallas/Fort Worth section (page 64)</td>
</tr>
<tr>
<td>Texas State Technical College</td>
<td>See below (page 57)</td>
</tr>
<tr>
<td>Trinity Valley</td>
<td>Drafting, Electrical, Horticulture (Greenhouse Management, Master Gardener), Welding</td>
</tr>
<tr>
<td>Tyler</td>
<td>Air Conditioning, Building Trades, Drafting, Landscaping, Welding</td>
</tr>
<tr>
<td>(The) Victoria</td>
<td>Construction, Electrical, Heating, Ventilation and Air Conditioning/Refrigeration</td>
</tr>
<tr>
<td>Wharton County</td>
<td>Auto Computer-Aided Design</td>
</tr>
</tbody>
</table>
Texas State Technical College

Texas State Technical College (TSTC) is an independent, state-supported technical college system that offers certificates and Associate of Applied Science degrees in technical-vocational subjects. TSTC also provides technical education and training to business and industry and community and state economic development initiatives and continuing education. TSTC includes four colleges (TSTC Harlingen, TSTC Marshall, TSTC Waco and TSTC West Texas, which has campuses in Abilene, Breckenridge, Brownwood and Sweetwater). The table below includes course and continuing education offerings in green economy fields.

<table>
<thead>
<tr>
<th>Degree Programs</th>
<th>Harlingen</th>
<th>Marshall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agricultural</td>
<td>Combination Welding</td>
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<td>Technology</td>
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<td>Technology</td>
<td>Drafting</td>
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<td>Chemical/Environmental</td>
<td>Diesel Equipment Technology</td>
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<td>Technology</td>
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<td>Drafting and Design</td>
<td>Diesel Engine Repair</td>
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<td>Electric Utility</td>
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<td>Construction and</td>
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<td>Technician</td>
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<td>Industrial</td>
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<td>Mechanic</td>
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<td>Mechatronics</td>
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<td>Introduction to</td>
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<td>Industrial</td>
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<td>Technology</td>
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<td>Introduction to</td>
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<td>Industrial</td>
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<td>Maintenance</td>
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<td>Mechatronics</td>
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<tr>
<td>Waco</td>
<td>Automotive</td>
<td>Automotive</td>
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<td>Technology</td>
<td>Technology</td>
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<td></td>
<td>Building Construction</td>
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<td>Technology</td>
<td>Technology</td>
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<tr>
<td>Texas State Technical College, continued</td>
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<td>--------------------------------------------</td>
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<tr>
<td><strong>Waco</strong></td>
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<tr>
<td>Chemical/Environmental Laboratory Technology</td>
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<tr>
<td>Diesel Equipment Technology</td>
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<tr>
<td>Drafting and Design</td>
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<tr>
<td>Electrical Power and Control Solar Energy Technology</td>
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<tr>
<td>Geospatial Technology</td>
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<tr>
<td>Golf Course and Landscape Management</td>
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<tr>
<td>Industrial Systems and Engineering Technology</td>
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<tr>
<td>Mechanical Engineering Technology</td>
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<tr>
<td>Welding Technology</td>
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<tr>
<td><strong>West Texas</strong></td>
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</tr>
<tr>
<td>Abilene</td>
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</tr>
<tr>
<td>Computer-Aided Drafting and Design</td>
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<tr>
<td>Breckenridge</td>
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<td>Environmental Science Technology</td>
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<tr>
<td>Environmental Technology</td>
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<td>Brownwood</td>
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<tr>
<td>Computer-Aided Drafting and Design</td>
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<tr>
<td>Mechatronics</td>
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<td>Welding Technology</td>
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<td>Sweetwater</td>
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<tr>
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<tr>
<td>Applied Engineering Technology</td>
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<td>Automotive Technology</td>
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<td>Diesel Technology</td>
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<td>Wind Energy Technology</td>
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<td>Harlingen</td>
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<td>Building Trades</td>
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<tr>
<td>Computer-Aided Design</td>
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<tr>
<td>Diesel</td>
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<tr>
<td><strong>Marshall</strong></td>
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<tr>
<td>Building Trades</td>
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<tr>
<td>Waco</td>
<td>Electrical</td>
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<td></td>
<td>Environmental Health, Safety and Quality</td>
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<td></td>
<td>Welding</td>
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<tr>
<td></td>
<td>National Electric Code</td>
<td></td>
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<tr>
<td></td>
<td>Oil and Gas</td>
<td></td>
</tr>
</tbody>
</table>
The Austin-Round Rock metro area consists of five counties, and is the 38th largest metro area in the U.S. In 2007, the Austin Chamber of Commerce released its five-year economic development plan, Opportunity Austin 2.0, for the Austin metro area. The plan specifically noted the priority of attracting green businesses to the area, such as manufacturers of solar panels, fuel cells, wind turbines and electric cars. To further this, in 2009, the Austin Chamber began to coordinate with local communities to improve green job education and training. Also in 2009, Austin required point-of-sale and point-of-lease home and commercial energy audits, which created an immediate need for trained professional home auditors. Austin Energy, the city’s municipally-owned utility, has been named the top “green” utility in the U.S. by the National Renewable Energy Lab for six straight years, and Austin ranked 13th on the U.S. Environmental Protection Agency’s list of the top 25 cities with Energy Star-qualified buildings. The Austin area has several initiatives underway to improve the green economy in the region, including:

- Austin Climate Protection Program
- Pecan Street Project—to design the energy system of the future, including a smart grid system and water conservation measures, using Austin as a clean energy laboratory
- University of Texas at Austin projects: The Center for Commercialization of Electric Technologies and the Clean Energy Incubator
- Texas Foundation for Innovative Communities—founded in conjunction with the Texas Clean Energy Park to attract green jobs to the region

Austin is the home to many high-tech companies as well as the University of Texas and the headquarters for state government.

**Workforce information, assistance and training are available at the following:**

<table>
<thead>
<tr>
<th>City employment websites</th>
<th>City of Austin jobs <a href="http://www.ci.austin.tx.us/hr/default.htm">http://www.ci.austin.tx.us/hr/default.htm</a></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>City of Round Rock jobs <a href="http://www.roundrocktexas.gov/jobs/">http://www.roundrocktexas.gov/jobs/</a></td>
</tr>
<tr>
<td>County employment websites</td>
<td>Travis County jobs <a href="http://www.co.travis.tx.us/human_resources/jobs/">http://www.co.travis.tx.us/human_resources/jobs/</a></td>
</tr>
<tr>
<td></td>
<td>Williamson County jobs <a href="http://www.wilco.org/CountyDepartments/HumanResources/tabid/456/Default.aspx">http://www.wilco.org/CountyDepartments/HumanResources/tabid/456/Default.aspx</a></td>
</tr>
<tr>
<td></td>
<td>Bastrop County jobs <a href="http://www.co.bastrop.tx.us/ips/cms/jobs.html">http://www.co.bastrop.tx.us/ips/cms/jobs.html</a></td>
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<tr>
<td></td>
<td>Caldwell County jobs <a href="http://www.co.caldwell.tx.us/ips/cms/jobs.html">http://www.co.caldwell.tx.us/ips/cms/jobs.html</a></td>
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<tr>
<td></td>
<td>Hays County Jobs <a href="http://www.co.hays.tx.us/Departments/HumanResources/CareerOpportunities/tabid/65/Default.aspx">http://www.co.hays.tx.us/Departments/HumanResources/CareerOpportunities/tabid/65/Default.aspx</a></td>
</tr>
<tr>
<td>State employment websites</td>
<td>Texas Workforce Commission <a href="http://www.twc.state.tx.us">http://www.twc.state.tx.us</a></td>
</tr>
<tr>
<td></td>
<td><a href="http://www.WorkinTexas.com">http://www.WorkinTexas.com</a></td>
</tr>
<tr>
<td></td>
<td>Workforce Solutions – Capital Area Workforce Board <a href="http://www.wfscapitalarea.com/">http://www.wfscapitalarea.com/</a></td>
</tr>
<tr>
<td>Union websites</td>
<td>Austin Electrical JATC (International Brotherhood of Electric Workers) <a href="http://www.ibew520.org">http://www.ibew520.org</a></td>
</tr>
<tr>
<td></td>
<td>Sheet Metal Workers Local 67 <a href="http://smw67.org">http://smw67.org</a></td>
</tr>
<tr>
<td>Other employment resources</td>
<td>American YouthWorks <a href="http://www.americanyouthworks.org">http://www.americanyouthworks.org</a></td>
</tr>
<tr>
<td></td>
<td>Austin Area Urban League <a href="http://www.aauil.org">http://www.aauil.org</a></td>
</tr>
<tr>
<td></td>
<td>Skillpoint Alliance <a href="http://www.skillpointalliance.org/">http://www.skillpointalliance.org/</a></td>
</tr>
<tr>
<td></td>
<td>Digital Workplace Academy <a href="http://www.dwacademy.org/">http://www.dwacademy.org/</a></td>
</tr>
<tr>
<td></td>
<td>Cool Austin Jobs <a href="http://www.coolaustinjobs.com">http://www.coolaustinjobs.com</a></td>
</tr>
</tbody>
</table>
Austin information, continued

Austin Community College (ACC) consists of seven campuses, with an eighth opening in 2010. It has over 40,000 credit students. ACC has taken a leadership role in training students for the green economy, especially for the solar energy industry. In 2009, ACC joined with other regional higher education institutions to share green sector curricula and faculty development resources. The table below shows the relevant green job course offerings at ACC. For the most recent course information, contact ACC directly.

<table>
<thead>
<tr>
<th>Degree Programs</th>
<th>Continuing Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Construction Technology</td>
<td>Advanced Solar Photovoltaic Installer</td>
</tr>
<tr>
<td>Management (sustainable/green business)</td>
<td>Solar Thermal Systems</td>
</tr>
<tr>
<td>Automotive Technology (hybrid auto technology) – in</td>
<td>Energy Conservation – Energy Efficiency Inspector</td>
</tr>
<tr>
<td>development</td>
<td>Problem Solving for PV System Design and Installation</td>
</tr>
<tr>
<td>Heating, Air Conditioning and Refrigeration Technology</td>
<td>Working Safely with Photovoltaic and Solar Hot Water Systems</td>
</tr>
<tr>
<td>Geographic Information Systems (GIS)</td>
<td>Incentives for Solar Energy Systems</td>
</tr>
<tr>
<td>Environmental Technology</td>
<td>Mounting Practices for Solar Energy Systems</td>
</tr>
<tr>
<td>Welding Technology</td>
<td>Distributed Energy Systems</td>
</tr>
<tr>
<td>Land Surveying and Geomatics</td>
<td>Wind Power Delivery System</td>
</tr>
<tr>
<td></td>
<td>Weatherization – in development</td>
</tr>
</tbody>
</table>

Austin information, continued
**Dallas/Fort Worth**

The Dallas/Fort Worth Metroplex consists of 12 counties and is the ninth largest metropolitan area in the U.S. The City of Dallas has recently begun to increase its efforts to encourage the purchase of hybrid vehicles and renewable energy resources. Currently, the City is already 12th among U.S. renewable energy purchasers. In October 2009, the new Dallas green building code went into effect (full implementation in 2011). The Metroplex already ranks high in energy efficient buildings, placing 5th on the U.S. Environmental Protection Agency’s list of the top 25 cities with Energy Star-qualified buildings. The Dallas Area Rapid Transit (DART) rail line is expected to undergo expansion, and a voluntary public-private partnership has further initiatives to limit sprawl and increase green space across 16 North Texas communities. Other area cities are undertaking initiatives that could lead to more green jobs, such as the City of Fort Worth’s Sustainability Action Plan, which is in process. Furthermore, Oncor, the major transmission and distribution utility for the region, has several energy efficiency programs, which will likely expand in the future. The Dallas/Fort Worth area is classified as a moderate nonattainment area, for failing to meet the federal ambient air quality standard for ground-level ozone, which could lead to innovation in new technologies for monitoring and reducing air quality.

The Dallas/Fort Worth Metroplex is a center of business and commerce, and several companies have an interest in the green economy, such as Westinghouse Solar Light Company, Honeywell and Nexant, among others.

Workforce information, assistance and training are available at the following:

<table>
<thead>
<tr>
<th>City employment websites</th>
<th>City of Dallas jobs <a href="http://agency.governmentjobs.com/dallas/default.cfm">http://agency.governmentjobs.com/dallas/default.cfm</a></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>City of Fort Worth jobs <a href="https://www.fortworthgov.org/hrappl/Job_Listing.asp">https://www.fortworthgov.org/hrappl/Job_Listing.asp</a></td>
</tr>
<tr>
<td>County employment websites</td>
<td>Collin County jobs <a href="http://www.co.collin.tx.us/human_resources/careers.jsp">http://www.co.collin.tx.us/human_resources/careers.jsp</a></td>
</tr>
<tr>
<td></td>
<td>Dallas County jobs <a href="http://www.dallascounty.org/department/HR/employment.html">http://www.dallascounty.org/department/HR/employment.html</a></td>
</tr>
<tr>
<td></td>
<td>Delta County jobs <a href="http://www.co.delta.tx.us/ips/cms/jobs.html">http://www.co.delta.tx.us/ips/cms/jobs.html</a></td>
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<tr>
<td></td>
<td>Ellis County jobs <a href="http://www.co.ellis.tx.us/Jobs.aspx">http://www.co.ellis.tx.us/Jobs.aspx</a></td>
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<tr>
<td></td>
<td>Johnson County jobs <a href="http://www.johnsoncountytx.org/departments/personnel/careers/">http://www.johnsoncountytx.org/departments/personnel/careers/</a></td>
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<tr>
<td></td>
<td>Parker County jobs <a href="http://www.co.parker.tx.us/ips/cms/jobs.html">http://www.co.parker.tx.us/ips/cms/jobs.html</a></td>
</tr>
<tr>
<td></td>
<td>Rockwall County Jobs <a href="http://www.rockwallcountytx.com/jobs.aspx">http://www.rockwallcountytx.com/jobs.aspx</a></td>
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<tr>
<td></td>
<td>Tarrant County Jobs <a href="http://www.tarrantcounty.com/ehr/cwp/browse.asp?a=742">http://www.tarrantcounty.com/ehr/cwp/browse.asp?a=742</a></td>
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<tr>
<td>State employment websites</td>
<td>Texas Workforce Commission <a href="http://www.twc.state.tx.us">http://www.twc.state.tx.us</a></td>
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<tr>
<td></td>
<td><a href="http://www.WorkinTexas.com">http://www.WorkinTexas.com</a></td>
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<tr>
<td></td>
<td>Workforce Solutions – Greater Dallas Workforce Board <a href="http://www.wfsdallas.com/WSMain.shtml">http://www.wfsdallas.com/WSMain.shtml</a></td>
</tr>
<tr>
<td></td>
<td>Workforce Solutions – North Central Texas Workforce Board <a href="http://www.dfwjobs.com/index.asp">http://www.dfwjobs.com/index.asp</a></td>
</tr>
<tr>
<td>Union websites</td>
<td>International Brotherhood of Electrical Workers Local 69 (Dallas – utility and broadcasting) <a href="http://www.ibewlocal69.com/">http://www.ibewlocal69.com/</a></td>
</tr>
<tr>
<td></td>
<td>International Brotherhood of Electrical Workers Local 20 (Dallas/Fort Worth) <a href="http://www.ibew20.org/">http://www.ibew20.org/</a></td>
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<tr>
<td></td>
<td>International Brotherhood of Electrical Workers Local 220 (Arlington) <a href="http://www.ibewlu220.com/">http://www.ibewlu220.com/</a></td>
</tr>
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<td>Other employment resources</td>
<td>Urban League Greater Dallas and North Central Texas <a href="http://www.ulgdntx.com/">http://www.ulgdntx.com/</a></td>
</tr>
<tr>
<td></td>
<td>Dallas Jobing <a href="http://dallas.jobing.com/">http://dallas.jobing.com/</a></td>
</tr>
</tbody>
</table>
The Dallas County Community College District (DCCCD) consists of seven colleges with over 69,000 credit students and 25,000 continuing education students. DCCCD has taken a leadership role in the state for technical education and training in energy efficiency fields. In 2009, DCCCD joined with other regional higher education institutions to share green sector curricula and faculty development resources. The following table shows the relevant green jobs course offerings at DCCCD. For the most recent course information, contact DCCCD or the individual college directly.

### DALLAS COUNTY COMMUNITY COLLEGE DISTRICT

<table>
<thead>
<tr>
<th>Degree Programs</th>
<th>All colleges</th>
<th>Brookhaven</th>
<th>Cedar Valley</th>
<th>Eastfield</th>
<th>El Centro</th>
<th>Mountain View</th>
<th>Northlake</th>
<th>Richland</th>
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<td>Heating, Ventilation and Air Conditioning</td>
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<td>Welding</td>
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<td></td>
<td>Water Conservation – in development</td>
</tr>
<tr>
<td>Construction Management</td>
<td>Environmental System Technology</td>
<td>Energy Management</td>
<td>Engineering</td>
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<tr>
<td>Lean Manufacturing for Sustainability Processing</td>
<td>Energy Efficiency</td>
<td>Heating, Ventilation and Air Conditioning</td>
<td>LEED Certification</td>
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<td>Weatherization</td>
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<td>Retrofitting</td>
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<td>Heating, Ventilation and Air Conditioning</td>
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<tr>
<td>LEED Certification</td>
<td>Plumbing/Plumbing</td>
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</tbody>
</table>

### Continuing Education

<table>
<thead>
<tr>
<th>All Colleges</th>
<th>Cedar Valley</th>
<th>Eastfield</th>
<th>Northlake</th>
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</thead>
<tbody>
<tr>
<td>Lean Manufacturing for Sustainability Processing</td>
<td>Energy Efficiency</td>
<td>Heating, Ventilation and Air Conditioning</td>
<td>LEED Certification</td>
</tr>
<tr>
<td></td>
<td>Heating, Ventilation and Air Conditioning</td>
<td>LEED Certification</td>
<td>Plumbing/Pipefitting</td>
</tr>
</tbody>
</table>
In addition to DCCCD, the Dallas/Fort Worth Metroplex is also home to Collin County Community College District (CCCCD) and Tarrant County College District (TCCD). CCCCĐ serves about 45,000 credit and continuing education students and TCCD has over 44,000 students. The tables below include relevant green jobs course offerings at these two institutions.

### COLLIN COUNTY COMMUNITY COLLEGE DISTRICT

<table>
<thead>
<tr>
<th>Degree Programs</th>
<th>Preston Ridge</th>
<th>Spring Creek</th>
<th>Central Park</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engineering</strong></td>
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<tr>
<td><strong>Biotechnology</strong></td>
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<tr>
<td><strong>Computer-Aided Drafting &amp; Design</strong></td>
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<tr>
<td><strong>Environmental Science</strong></td>
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<tr>
<td><strong>Interior and Architectural Design – Green Interior and Architectural Design Specialization</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuing Education</th>
<th>Preston Ridge</th>
<th>Spring Creek</th>
<th>Central Park</th>
</tr>
</thead>
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<tr>
<td><strong>Green Home Renovation</strong></td>
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<tr>
<td><strong>Retrofitting: Introduction to Home Energy Systems</strong></td>
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<tr>
<td><strong>Using Green Textiles in Interior Design</strong></td>
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<tr>
<td><strong>Green Cleaning Practices</strong></td>
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<tr>
<td><strong>Renewable Water Design</strong></td>
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<td><strong>Environmentally Safe Waste Management</strong></td>
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<tr>
<td><strong>Green Marketing</strong></td>
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<tr>
<td><strong>Sustainable Landscape Practices</strong></td>
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<tr>
<td><strong>Landscaping with Native Plants</strong></td>
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<tr>
<td><strong>Basic Electrical Technology for Renewable Energy</strong></td>
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</table>

### TARRANT COUNTY COLLEGE DISTRICT

<table>
<thead>
<tr>
<th>Degree Programs</th>
<th>Northwest</th>
<th>South</th>
<th>Southeast</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Lab Technician</strong></td>
<td>Environmental Lab Technician</td>
<td>Environmental Lab Technician</td>
<td>Environmental Lab Technician</td>
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<td><strong>Horticulture</strong></td>
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<td><strong>Automotive</strong></td>
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</tr>
<tr>
<td><strong>Computer-Aided Drafting</strong></td>
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<td>Computer-Aided Drafting</td>
<td>Computer-Aided Drafting</td>
</tr>
<tr>
<td><strong>Engineering (Transfer)</strong></td>
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<td>Engineering (Transfer)</td>
<td>Engineering (Transfer)</td>
</tr>
<tr>
<td><strong>Heating, Air Conditioning &amp; Refrigeration</strong></td>
<td>Heating, Air Conditioning &amp; Refrigeration</td>
<td>Heating, Air Conditioning &amp; Refrigeration</td>
<td>Heating, Air Conditioning &amp; Refrigeration</td>
</tr>
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<td><strong>Welding Technology</strong></td>
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<td>Welding Technology</td>
<td>Welding Technology</td>
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<tr>
<td><strong>Architecture</strong></td>
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</tr>
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<td><strong>Construction Management</strong></td>
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<td>Construction Management</td>
</tr>
<tr>
<td><strong>Engineering (Transfer)</strong></td>
<td>Engineering (Transfer)</td>
<td>Engineering (Transfer)</td>
<td>Engineering (Transfer)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuing Education</th>
<th>Northwest</th>
<th>South</th>
<th>Southeast</th>
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</thead>
<tbody>
<tr>
<td><strong>Automotive Technology</strong></td>
<td>Automotive Technology</td>
<td>Automotive Technology</td>
<td>Automotive Technology</td>
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<td><strong>Carpentry</strong></td>
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<td>Carpentry</td>
<td>Carpentry</td>
</tr>
<tr>
<td><strong>Drafting</strong></td>
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</tr>
<tr>
<td><strong>Welding Technician</strong></td>
<td>Welding Technician</td>
<td>Welding Technician</td>
<td>Welding Technician</td>
</tr>
</tbody>
</table>
Houston

The Houston metro area consists of 10 counties and is the 10th largest metropolitan area in the U.S. The City of Houston has instituted a comprehensive set of initiatives aimed at making it more sustainable. The U.S. Environmental Protection Agency ranks the City as the number one municipality purchasing renewable energy. In October 2009, the new Houston residential energy efficient building code went into effect, and it requires a 15 percent increase in energy efficiency over the most recent building code. The City already ranks high in energy efficient buildings, placing 3rd on the EPA's list of the top 25 cities with Energy Star-qualified buildings. Houston is also a U.S. Department of Energy Solar City, which has led to initiatives such as establishing solar neighborhood programs, workforce development at Houston Community College, and solar demonstration sites throughout the City. Other City initiatives include green building for City and commercial buildings, efficient street lighting, hybrid vehicles for the City fleet, and waste and water management. Furthermore, CenterPoint Energy, the major transmission and distribution utility for the region, has several energy efficiency programs, which will likely increase in the future. The Houston area is classified as a severe nonattainment area, for failing to meet the federal ambient air quality standard for ground-level ozone, which could lead to innovation in new technologies for monitoring and reducing air quality.

The Houston metro area is a major U.S. energy center, producing large amounts of petrochemicals and refined products, as well as the location of a major international port. In addition to these sectors, Houston is home to a large number of hospitals and medical research facilities, many of which have joined together to form a sustainability coalition.

Workforce information, assistance and training are available at the following:

<table>
<thead>
<tr>
<th>City employment websites</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Houston jobs [link]</td>
</tr>
<tr>
<td>City of Galveston jobs [link]</td>
</tr>
<tr>
<td>City of Sugar Land jobs [link]</td>
</tr>
<tr>
<td>City of Baytown jobs [link]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>County employment websites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harris County jobs [link]</td>
</tr>
<tr>
<td>Austin County jobs [link]</td>
</tr>
<tr>
<td>Brazoria County jobs [link]</td>
</tr>
<tr>
<td>Chambers County jobs [link]</td>
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<tr>
<td>Fort Bend County jobs [link]</td>
</tr>
<tr>
<td>Galveston County jobs [link]</td>
</tr>
<tr>
<td>Liberty County jobs [link]</td>
</tr>
<tr>
<td>Montgomery County jobs [link]</td>
</tr>
<tr>
<td>San Jacinto County jobs [link]</td>
</tr>
<tr>
<td>Waller County jobs [link]</td>
</tr>
</tbody>
</table>
Houston Community College System (HCCS) consists of five colleges and has over 57,000 credit and continuing education students. The table below shows relevant green jobs course offerings at HCCS. For the most recent course information, contact HCCS or the individual college directly.

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Workforce Solutions – Houston-Galveston Workforce Board <a href="http://www.wrksolutions.com/">http://www.wrksolutions.com/</a></td>
</tr>
<tr>
<td>Union websites</td>
<td>International Brotherhood of Electrical Workers Local 66 (Pasadena) <a href="http://www.ibew66.org/">http://www.ibew66.org/</a></td>
</tr>
<tr>
<td></td>
<td>International Brotherhood of Electrical Workers Local 20 (Dallas/Fort Worth) <a href="http://www.ibew20.org/">http://www.ibew20.org/</a></td>
</tr>
<tr>
<td></td>
<td>International Brotherhood of Electrical Workers Local 716 (Houston) <a href="http://ibew716.net/">http://ibew716.net/</a></td>
</tr>
<tr>
<td>Other employment resources</td>
<td>Houston Area Urban League <a href="http://www.haul.org/">http://www.haul.org/</a></td>
</tr>
<tr>
<td></td>
<td>HoustonWorks USA <a href="http://www.houstonworks.org/">http://www.houstonworks.org/</a></td>
</tr>
<tr>
<td></td>
<td>Houston Jobing <a href="http://houston.jobing.com/">http://houston.jobing.com/</a></td>
</tr>
<tr>
<td></td>
<td>Houston Jobs <a href="http://www.houstonjobs.com/">http://www.houstonjobs.com/</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOUSTON COMMUNITY COLLEGE SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree Programs</td>
</tr>
<tr>
<td>Central College</td>
</tr>
<tr>
<td>Geology/Environmental Science</td>
</tr>
<tr>
<td>Engineering</td>
</tr>
<tr>
<td>Construction Technology</td>
</tr>
<tr>
<td>Industrial Electricity</td>
</tr>
<tr>
<td>Heating, Air Conditioning and Refrigeration</td>
</tr>
<tr>
<td>Welding Technology</td>
</tr>
<tr>
<td>Automotive Technology</td>
</tr>
<tr>
<td>Diesel Engine Mechanic and Repairer</td>
</tr>
<tr>
<td>Drafting and Design Engineering Technology</td>
</tr>
<tr>
<td>Geology/Environmental Science</td>
</tr>
<tr>
<td>Instrumentation and Controls Engineering Technology</td>
</tr>
<tr>
<td>Petroleum Engineering</td>
</tr>
<tr>
<td>Northwest College</td>
</tr>
<tr>
<td>Drafting and Design Engineering Technology</td>
</tr>
<tr>
<td>Southwest College</td>
</tr>
<tr>
<td>Drafting and Design Engineering Technology</td>
</tr>
<tr>
<td>Air Conditioning, Bilingual</td>
</tr>
<tr>
<td>Heating, Ventilation and Air Conditioning Technician</td>
</tr>
<tr>
<td>Residential Wiring, Bilingual</td>
</tr>
<tr>
<td>Water Quality and Wastewater Treatment Certification</td>
</tr>
</tbody>
</table>

Houston Workforce information, continued
The Lone Star College System (LSCS) also serves the Houston area. It consists of five campuses and has almost 60,000 students enrolled in their programs. The table below includes the relevant green jobs course offerings at LSCS.

<table>
<thead>
<tr>
<th>Degree Programs</th>
<th>All Colleges</th>
<th>Engineering Design Graphics Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>CyFair</td>
<td>Architecture</td>
<td>Geographic Information Systems (GIS)</td>
</tr>
<tr>
<td></td>
<td>Industrial Technology</td>
<td></td>
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<tr>
<td></td>
<td>Welding Technology</td>
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<tr>
<td>Kingwood</td>
<td>Architecture</td>
<td></td>
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<tr>
<td></td>
<td>Facilities Management</td>
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<tr>
<td></td>
<td>Interior Design</td>
<td></td>
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<tr>
<td>Montgomery</td>
<td>Automotive Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Land Surveyor</td>
<td></td>
</tr>
<tr>
<td>North Harris</td>
<td>Architecture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Automotive Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engineering Design Graphics Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heating, Ventilation, Air Conditioning and Refrigeration Technology</td>
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<tr>
<td></td>
<td>Welding Technology</td>
<td></td>
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<tr>
<td>Tomball</td>
<td>Electrician</td>
<td></td>
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<tr>
<td></td>
<td>Engineering Design Graphics Technology</td>
<td></td>
</tr>
<tr>
<td>All Colleges</td>
<td>Welding Technology</td>
<td></td>
</tr>
<tr>
<td>CyFair</td>
<td>Construction Management</td>
<td></td>
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<tr>
<td></td>
<td>Automotive Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diesel Technology</td>
<td></td>
</tr>
<tr>
<td>Montgomery</td>
<td>Heating, Ventilation, Air Conditioning and Refrigeration Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Land Surveyor</td>
<td></td>
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<tr>
<td></td>
<td>Real Estate Inspection</td>
<td></td>
</tr>
<tr>
<td>North Harris</td>
<td>Architectural Drafting</td>
<td></td>
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<tr>
<td></td>
<td>Automotive Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction Management</td>
<td></td>
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<tr>
<td></td>
<td>Diesel Technology</td>
<td></td>
</tr>
<tr>
<td>Tomball</td>
<td>Alternative Energy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrician</td>
<td></td>
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<tr>
<td></td>
<td>Real Estate Inspection</td>
<td></td>
</tr>
</tbody>
</table>
San Antonio

The San Antonio-New Braunfels metro area consists of eight counties and is the 30th largest metropolitan area in the U.S. In 2009, San Antonio’s mayor announced Mission Verde, a plan to create a 21st century economy with an emphasis on green jobs, centered on energy efficiency and renewable energy investments. Mission Verde includes large-scale weatherization and retrofit programs for residences and city buildings, renewable energy generation and storage, high-performance building codes, a multi-tech venture capital fund to attract and support new technology industries to the city, increased utility energy efficiency programs, and a green jobs program. San Antonio is also a U.S. Department of Energy Solar America City, which has led to a plan to reduce barriers to the commercialization of solar and other renewable energy technologies and to make the city a leader in distributed energy. Water management and conservation are critical components of San Antonio’s environmental policies, as much of the region relies solely on the Edwards Aquifer for drinking water. Mission Verde has placed an emphasis on creating green jobs relating to water conservation, including water auditors, landscape, arborist and irrigation workers, and wastewater recycling and treatment operators.

The San Antonio metro area is the tourism capital of the state and a major center of military and related industries.

Workforce information, assistance and training are available at the following:

| City employment websites | City of San Antonio jobs http://www.sanantonio.gov/hr/ |
| County employment websites | City of New Braunfels jobs http://www.nbtexas.org/jobs.aspx |
| | Bexar County jobs http://www.co.bexar.tx.us/PRM/Apply.html |
| | Comal County jobs http://www.co.comal.tx.us/HR.htm |
| | Guadalupe County jobs http://www.co.guadalupe.tx.us/countyjobs.htm |
| | Kendall County jobs http://www.co.kendall.tx.us/county-info/careers |
| | Wilson County jobs http://www.co.wilson.tx.us/ips/cms/jobs.html |
| State employment websites | Texas Workforce Commission http://www.twc.state.tx.us |
| | http://www.WorkinTexas.com |
| | Workforce Solutions – Alamo Workforce Board http://www.alamoworksource.org/ |
| Union websites | International Brotherhood of Electrical Workers Local 60 http://www.ibewlu60.org/ |
| Other employment resources | JobsinSanAntonio http://jobsinsanantonio.org/ |
| | LatPro Network San Antonio http://network.latpro.com/group/sanantonio |
| | San Antonio Jobing http://sanantonio.jobing.com/ |
| | Houston Jobs http://www.houstonjobs.com/ |
The Alamo Community College District (ACCD) consists of five colleges and has approximately 100,000 credit and continuing education students. ACCD has taken a leadership role among community colleges in the state for technical education and training in water and landscape management. In 2009, ACCD joined with other regional higher education institutions to share green sector curricula and faculty development resources. The table below shows the relevant green jobs course offerings at ACCD. For the most recent course information, contact ACCD or the individual college directly.

### ALAMO COLLEGES

<table>
<thead>
<tr>
<th>College</th>
<th>Degree Programs</th>
<th>Continuing Education</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Northwest Vista</strong></td>
<td>Engineering</td>
<td>Advanced Water Treatment</td>
</tr>
<tr>
<td><strong>Palo Alto</strong></td>
<td>Agriculture, Engineering, Environmental Studies, Landscape and Horticultural Science, Small/Organic Farming certificate</td>
<td></td>
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<tr>
<td><strong>St Philip’s</strong></td>
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</tbody>
</table>

San Antonio information, continued