

Electrical Trades



How Green is Changing the Electrical Trades Jobs

Almost every job in the electrical trades is a green job. The electrical trades are at the core of the new energy economy and your students need to be going into the workplace with the skills that are expected of them. Your school's curriculum needs to connect students to the jobs of the 21st century.

New legislation and guidelines are creating new jobs in renewable energy, energy auditing, electrical system inspection and smart energy. All jobs in the electrical trades will expand to incorporate new techniques, processes, and technologies.

The Future of Electrical Trades Employment

Electrical Trades Employment Projections

The demand for trained electrical workers is projected to increase as a result of tax incentives, government programs, and ongoing stimulus and economic recovery programs that specifically mandate renewable energy solutions.

OCCUPATIONAL TITLE	SOC CODE	EMPLOYMENT, 2006	PROJECTED EMPLOYMENT, 2016	CHANGE, 2006-16	
				NUMBER	PERCENT
Electricians	47-2111	705,000	757,000	52,000	7
New jobs in new renewable / "green" technologies (photovoltaics, wind farms, power generation)			35,000	35,000	100
Total "Green-trained" Electricians			787,000	87,000	10

Source: (base data from the U.S. Department of Labor Statistics) <http://www.bls.gov/oco/ocos206.htm>

For information on "greening" your curriculum
contact your local Delmar, Cengage Learning Representative

Or visit us at www.thegreendestination.com

1-800-354-9706

Electrical Trades *cont.*

Employment and Education Changes for Electrical Workers

U.S. Department of Labor suggests by 2016 virtually all individuals in the electrical trades will need to be “green-trained” because of the change to the “green economy”. The economy and new environmental energy regulations are creating green jobs in the electrical trades within three major areas: energy efficiency, renewable energy, and smart energy.

Energy Efficiency:

Maintenance electricians who are already practicing will need to upgrade their skills in order to be able to install new systems that improve energy efficiency, and to develop maintenance schedules that focus on energy efficiency.

Electrical contractors and **construction electricians** will need to understand the new systems and how to incorporate them in new and existing buildings.

Electrical inspectors will need to have the training necessary to assure that the new energy efficient systems meet standards, and comply with regulations and codes.

Electrical technicians will be required to test equipment and systems that are used to achieve high energy efficiency. The equipment they test, install, and maintain will be for residential, commercial, and high-capacity power generation and transmission.

Renewable Energy:

Maintenance electricians will be needed to perform maintenance and upgrades on photovoltaic systems, wind turbine systems, fuel cell systems, and in other renewable energy installations.

Construction electricians will be required in the installation of renewable energy systems, and as technology advances, for upgrades that need to be made to existing facilities.

Electrical technicians will be at the center of testing the systems that are used in the conversion of renewable energy.

Electrical inspectors will need to have an understanding of renewable energy power generation systems in order to assure that they are working correctly and safely, and to assure compliance with regulations and codes.

Smart Grid:

The creation of a nationwide Smart Grid will require maintenance and construction electricians at every stage of installation, testing, maintenance, and repair. The equipment used will be installed, and the remote control and monitoring capabilities will require wiring, testing, and installation of monitors.

Education – Connecting your Curriculum to the 21st Century

What does this all mean for the education of electrical workers?

The core requirements for an electrical education will still consist of the completion of an apprentice program, an associate degree, or a certificate in Electrical Systems. Electrical and Electronic Technicians, Computer and Electronics Technicians, and related programs will remain in demand.

Coursework will continue to include basic electrical theory, digital technologies, electronics and circuits, industrial electricity, mechanical electrical control systems, microprocessors, controls, semiconductors, and the National Electrical Code.

Essential Green Electrical Courses & Competencies

- Photovoltaics
- Wind Turbine Operations
- Renewable Energy Power Generation (Small Scale Commercial and Residential, Industrial)
- Energy Efficient Electrical Systems (Residential, Commercial, Industrial)
- Monitoring Systems (SmartGrid)
- Green Energy Safety
- Green Energy Codes and Compliance

Additional Resources, Certificates and Certification

- Green Building Certification Institute: www.gbci.org
- Green Building Practices: www.greenbuilding.com
- Green-E Certification (States have their own certification standards.): www.greene.org
- LEED Green Associates: www.gbci.org
- LEED Green Building Certification System: www.usgbc.org

Training, Certificates & Certification, Apprenticeship Programs

- Associated Builders and Contractors, Workforce Development Department: www.trytools.org
- Independent Electrical Contractors, Inc: www.ieci.org
- National Association of Home Builders, Home Builders Institute: www.nahb.org; www.hbi.org
- National Center for Construction Education and Research: www.nccer.org
- National Electrical Contractors Association: www.necanet.org
- National Joint Apprenticeship Training Committee: www.njatc.org

For information on “greening” your curriculum contact your local Delmar, Cengage Learning Representative

Or visit us at www.thegreendestination.com

1-800-354-9706