

HVAC



How Green is Changing the HVAC Jobs

The economic growth and job creation potentials of green technologies in the heating, ventilation, air conditioning, and refrigeration (HVACR) industry are tremendous. With the government stimulus programs, tax incentives, and increased public awareness, the demand for green trained HVAC technicians has greatly increased.

HVAC energy efficiency has come to the forefront of the discussions about environmental standards, national security and economic stimulus. Energy efficiency is now seen as the first option in the race for secure and clean energy sources.

As new and more energy efficient HVAC technologies become available in the marketplace there is a need for more trained technicians to install and monitor these new devices in homes, commercial buildings, and industrial settings. It is essential for your school to match your HVAC curriculum to the jobs of the 21st century.

The Future of HVAC Employment

HVAC Employment Projections

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

JOB	EMPLOYMENT, 2008	EMPLOYERS	PROJECTED GROWTH RATE OVERALL, 2008-2018
Heating, air-conditioning, and refrigeration mechanics and installers	308,000 jobs	Contractors (plumbing, heating, and air-conditioning); refrigeration service and repair shops; schools, military, government, and industrial facilities; commercial; self-employed.	28 percent in the 2008 – 2018 timeframe

Source: U.S. Bureau of Labor Statistics, 2010-2011 edition - www.bls.gov/oco/ocos192.htm

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Employment and Education Changes or HVAC Workers

Indoor climate control design, installation, maintenance, repair, and retrofitting is a high-growth area expected to continue its expansion potential for the next several years. Growth is spurred by three major “green” drivers: energy efficiency, renewable energy, and environmental quality.

Energy Efficiency: HVAC technicians are required to design, install, test, and maintain energy efficient climate systems for new and existing construction. Demand is strong in residential, commercial, and industrial installations, and to tie climate systems into new “smart grid” systems. The need for auditors and inspectors is growing as new monitoring techniques become available.

Renewable Energy HVAC Solutions: Solar heating along with geothermal are the most widely used renewable climate control sources, although it is conceivable there could be individual wind-powered heating and air solutions. As technology evolves, renewable will become even more attractive, which will boost demand. Tax credits and incentives also boost demand.

Environmental Quality: Environmental Quality is important to the green HVAC technician. U.S. Environmental Protection Agency regulations require compliance with emissions standards. Further, it is required that heating and air conditioning systems be sized to assure they are appropriate for the installation.

The fact is, green HVAC is rapidly becoming the way of doing business. All workers at all levels of the HVAC industry need to keep up with new techniques and be in compliance with new codes in this new green economy. HVAC workers who do not have current certifications or understanding of technology will have difficulty finding positions.

To be “green” in HVAC workers and contractors need to:

- promote sustainability of the whole enterprise (or community) through sustainable and green building practices
- implement energy efficient solutions through alternative/renewable energy
- use environmentally-friendly chemicals and components
- reduce emissions and waste
- use appropriate sizing for the building: energy-efficient and cost-effective indoor environmental solutions
- upgrade components of the system during scheduled maintenance
- understand and utilize the latest in HVAC green technologies, including equipment upgrade and energy-efficient issues

Education – Connecting your Curriculum to the 21st Century

Essential Green HVAC Courses & Competencies

- Green Building Design – Commercial and Residential
- Green Heating and Air Conditioning Systems Operation – Commercial and Residential
- Environmental Quality: Emissions Control
- Indoor Climate Control Energy Efficiency: Monitoring and Maintenance
- Green Chemistry and Materials
- Solar Heating Systems
- Geothermal Heating Systems
- Green Building Codes and Compliance

Additional Resources, Certificates and Certification

- Air-Conditioning Contractors of America: EPA Refrigerant Certification: EPA Section 608 Certification for operators. To work on stationary air conditioners and refrigeration systems, the technician must be certified under Section 608 of the Clean Air Act. The ACCA offers EPA certification training programs. www.acca.org
- Air-Conditioning and Refrigeration Institute: www.ari.org
- Home Builders Institute, National Association of Home Builders: www.hbi.org; www.nahb.org
- HVAC Excellence provides certifications in the HVACR industry including the Green Awareness a new credentialing exam. www.hvacexcellence.org
- LEED Certification (version 3)
- Mechanical Contractors Association of America: www.mcaa.org
- National Center for Construction Education and Research: www.nccer.org
- National Occupational Competency Testing Institute: The Plumbing-Heating-Cooling Contractors-National Association Educational Foundation is collaborating with NOCTI to offer four certification assessments in plumbing. www.nocti.org
- North American Technician Excellence: 21 NATE tests – includes sustainability ones: Senior HVAC Efficiency Analyst www.natex.org
- U.S. Green Building Council: www.usgbc.org

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