

## Critical Skills Required By U.S. Business & Industry Employers

### Technical

- Basic academic competencies: math, science, reading, writing
  - Math (basic, geometry, college algebra, pre-calculus, trigonometry)
  - Science (e.g., thermodynamics, heat transfer, chemical interactions)
- Safety/risk assessment
- Systems thinking/planning/integration
- Mechanical (including use of tools)
- Electrical
- Electronics
- Computer/IT/security
- Broad energy technology knowledge base
- Quality Assurance/Quality Control (QA/QC)
- Digital instrumentation and control (e.g., DDC, PLC, network security)
- Data collection/management/analysis/interpretation (including trend analysis)
- Troubleshooting
- Blueprint reading
- Business finance/economics
- Customer service
- Sales
- Work ethic (e.g., punctuality, application to work, respect shown to colleagues)
- Critical thinking
- Problem-solving
- Teamwork
- Works well with minimal supervision
- Entrepreneurship
- Leadership
- Interpersonal
  - Conflict management
  - Negotiation
  - Consensus-building
  - Give and take feedback
  - Coaching/mentoring
- Personal effectiveness
  - Ability to focus
  - Ability to listen
  - Lifelong learning and flexibility to learn
  - Creativity (multidisciplinary)
  - Self-motivation
  - Inquisitiveness
  - Grooming/appearance

### Employability

- Communication
  - Written
  - Verbal
  - Public/group speaking
- Workplace ethics
  - Honesty
  - Integrity
  - Reliability
  - Dependability
  - Trustworthiness



## Biggest Growth Areas In Energy Technician Occupations

### Energy-Efficient Building Technologies

- Residential Energy Auditing/Weatherization Technician
- Building Management Technician
- Building Operator/Building Utility Maintenance Technician
- Industrial Maintenance Technician
- Building Retrofitter
- Building Auditor
- Mechanical Systems Technician (e.g., welding, plumbing, pipefitting, boiler-making, electrical, HVACR)
- Electrician
- Electronics Engineering Technician
- Digital Instrumentation and Control Technician

### Power Generation/Distribution

- Process Technician
- Power Generation Technician
- Power Distribution Technician
- Power Plant Operator
- Nuclear Plant Technician
- Utility Worker (transmission/distribution)
- Cyber Security Technician
- Grid Security Technician
- Smart Grid Management Technician
- Solar Energy Systems Technician (design, installation, maintenance)
- Salesperson
- Energy Storage Technician

### Energy-Efficient Transportation

- Automotive Service Technician

## Key Changes In Jobs Within The Next Five Years

### Technical

- Chemistry
- Applied physics
- Safety
- Security
- Policy changes
- Increased dependence on computer skills (IT, instrumentation, controls)
- Increased need for cyber security
- Home technology integration
- Fuel cell technology
- Vehicle-to-grid technology

- Enhanced understanding of monitoring and data analysis
- Convergence of systems and programs (integration)
- Enterprise systems (multiple converging technologies)

### Employability

- Enhanced communication
- Increased need for global teamwork (e.g., virtual, asynchronous, cultural diversity)
- Collaboration for systems troubleshooting
- Understanding of changing global economy
- Intergenerational and interethnic understanding
- Adaptability/flexibility/willingness to learn
- Increased need for leadership
- Increased use of social media

# ENERGY TECHNICIANS



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