CLEAN ENERGY CENTER®

Massachusetts Climate Careers: Powering the Future Climate Hero Spotlight: Electricians



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What is in an electrician's toolbox?

Multimeter:

- Measures electrical properties, such as voltage, current, and resistance
- Essential for troubleshooting and safety





What is in an electrician's toolbox?

Wire strippers:

- Strips the insulation from wires
- Ensures clean, safe wire connections







What is in an electrician's toolbox?

Conduit bender:

- Bends metal and plastic conduit pipes and tubing to specific angles
- Allows electricians to organize wires in safe, specific routes through buildings







What is in an electrician's toolbox?

Circuit tester:

- Used to check if any electrical power is running through an outlet or circuit
- Essential precaution for safety





Today's Agenda

- The Big Question and My Climate Goals
- Climate Watch and Discussion
- Electricians in Clean Energy Projects
- Electrician Skills and Career Pathways
- Electrician Project Planning Challenge
- Takeaways and Closing Activity





How do electricians play a critical role in implementing climate solutions?









My Climate Goals

When you complete this lesson, you'll be able to:

- Explore the range of clean energy projects that electricians work on.
- Identify the skills, training, and experiences needed to become an electrician.
- Discuss what aspects of a career as an electrician are aligned with your skills, interests, and desired work environment.





Electricians in Clean Energy

- Solar panel installation and maintenance
- EV charger installation
- Wind turbine maintenance
- Building electrification and upgrades
- Energy efficiency retrofits

Solar Energy

Residential, commercial, and utility-scale solar projects











Wind Energy

- Offshore wind farms
- Utility-scale wind farms
- Community wind projects









Building Electrification

- Residential retrofits
- Commercial upgrades
- Building electrification





Transportation

- Residential EV chargers
- Commercial charging stations
- Public EV infrastructure







Climate Watch: Video



Climate Watch Discussion

- What did the apprentices say they liked about beginning their career path with an apprenticeship?
- 2. What is one question you would ask an apprentice?
- 3. What do the apprentices highlight as benefits of training through the IBEW trade union?





Clean Energy Workers' Trade Unions

- International Brotherhood of Electrical Workers
- Sheet Metal Workers International Association
- International Association of Heat and Frost Insulators and Asbestos Workers
- United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry
- International Union of Painters and Allied Trades
- Laborers International Union







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Knowledge and Skills

- Safety practices and protocols
- Electrical installation and wiring
- Troubleshooting and problemsolving
- Familiarity with renewable energy systems



Training Pathway

- High school diploma or GED
- Vocational training programs
 Apprentice (work + school)
- Journeyman (pass an exam)
- Master electrician

Demand for electricians will have increased by **37 percent** by 2030!







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Today's Group Activity

Electrician Project Planning Challenge



Solar installation



EV charge station setup



Wind turbine maintenance

Energy-efficient building retrofit





Key Points

- Electricians are essential to installing, maintaining, and upgrading systems necessary for the clean energy transition.
- Electricians work in residential, commercial, and industrial settings.
- To become an electrician, one must have problem-solving skills, technical expertise, and adaptability to new technologies.
- The shift to clean energy creates a growing demand for electricians.





Closing Activity

Before You Go

- What challenges will we face if we don't have enough electricians for clean energy projects?
- 2. How can we encourage more people to enter the electrician field?
- 3. How do electricians help to build climate resilience?

