

Massachusetts Clean Energy Technology Center

Pathmaker Core Competencies Checklist

Core Competencies represent the minimum requirements for a Pathmaker-approved training program. Additional skills and competencies based on specific employer needs and/or requests may also be included. The MassCEC Pathmaker Core Competencies Checklist defines the areas that must be included in a proposed curriculum, with specific examples of focus areas that may be included to satisfy each required competency area. There are distinct Core Competencies identified for applicants proposing training for BESS technician versus Power Systems technician tracks. Given that this is the inaugural pilot of the framework, MassCEC expects to work closely with selected applicants and participating industry partners to further develop, refine, and expand the Core Competencies as needed to ensure alignment with evolving workforce and employer needs.

PathmakerBESS

PathmakerBESS trains individuals for entry-level roles as BESS Technicians or BESS Engineers, occupations focused on the design, installation, monitoring and maintenance of energy storage solutions. While BESS Engineers typically also need a higher educational degree to be competitive, BESS Technicians and Engineers share similar base level systems and safety knowledge.

General Competencies

- ☐ Durable Skills/Career Readiness: including, but not limited to, work etiquette, communication skills, interview and resume preparation, and computer literacy.
- ☐ Contextualized English and Math: (if needed due to target population), to ensure participants have the basic literacy necessary to successfully complete the curriculum.

Technical Competencies

- ☐ Workplace Safety: OSHA 30-Hour Training
- ☐ Electrical Basics: understanding of circuits (AC and DC) and electrical knowledge
- ☐ Battery Energy System Fundamentals: understanding energy storage technology, parts, and characteristics
- ☐ Battery Energy System Design: learning how to properly size and site energy storage systems, including considerations for safety and emergency containment
- ☐ Battery Energy System Installation: knowledge of how to read construction drawings and install BESS systems in the field, including integration with safety

systems, proper sizing of cabling, overcurrent protection, lockout procedures, confirming efficacy of monitoring systems, and verifying proper install

- ❑ Battery Energy System Commissioning: ability to verify, test, and document a new BESS system before going live, including key visual inspections, system tests, communication and monitoring tests, and documenting all tests
- ❑ Battery Energy System Maintenance: proficiency at regular maintenance of BESS systems, including knowledge of system shutdown and startup procedures, indicators of system failure, signs of battery degradation, known failure points, remote diagnostic approaches, and appropriate and safe steps to address identified issues
- ❑ Compliance and Monitoring Standards: familiarity with various safety and building codes, including National Fire Protection Association (NFPA) 70 and 70E and National Electrical Code (NEC); with the standards and codes of local authorities; and with safety procedures including chemical spills, fire safety, and electrical safety.

Please note: several nationally recognized certifications for BESS Technicians exist, including the NABCEP Energy Storage Installation Professional Certification (ESIP) and the Tonex Certified BESS Technician Certification (CBESST). Applicants are encouraged to work with their employer partners to identify the preferred certification and modify the Core Competencies to the standards set forth within those certifications to enable participants to successfully obtain a BESS Technician certification upon training completion.

PathmakerPOWER

PathmakerPOWER trains individuals for entry-level roles as Power Systems Technicians, professionals that install, test, calibrate, maintain and repair electrical power equipment in wide variety of settings.

General Competencies

- ❑ Durable Skills/Career Readiness: including, but not limited to, work etiquette, communication skills, interview and resume preparation, and computer literacy.
- ❑ Contextualized English and Math: (if needed due to target population), to ensure participants have the basic literacy necessary to successfully complete the curriculum.

Technical Competencies

- ❑ Workplace Safety: OSHA 30-Hour Training

- Electrical Fundamentals: understanding basic concepts of electricity, including the physics and formulas behind circuits.
- Components of Power Generation: familiarity with the typical components of a power generation system such as transformers, capacitors, induction motors.
- Power Systems Technician Tools: understanding the typical hand and power tools used by Power Systems Technicians and how to select the proper tool for the task at hand.
- Electrical Safety: knowledge on procedures to stay safe while working on electrical systems, including risk assessment, lockout/tagout, and personal protective equipment.

Please note: several nationally recognized certifications for Power Systems Technicians exist, including the NETA Electrical Testing Technicians Certification (ETT) and NICET Electrical Power Testing Certification, which are geared towards broader electrical power systems testing relevant for work on a larger scale network, and the ESGA Technician Certification, which is geared towards more localized onsite power generation maintenance. Applicants are encouraged to work with their employer partners to identify the preferred certification, determine an agreed upon certification level within the selected certification, and modify the Core Competencies to the standards set forth within those certifications to enable participants to successfully obtain a Power Systems Technician certification upon training completion.