



North American Board of Certified Energy Practitioners

PHOTOVOLTAIC (PV) ENTRY LEVEL CERTIFICATE OF KNOWLEDGE

OVERVIEW, PROCESS & POLICIES

About NABCEP

The North American Board for Certified Energy Practitioners, Inc. (NABCEP) is a national voluntary, non-profit, professional credentialing organization lead by PV industry stakeholders. NABCEP certifies qualified practitioners in the fields of renewable and sustainable energy, and energy efficiency technologies, who have met the professional knowledge standards established by NABCEP. The purpose and goal of NABCEP is to assess and measure objectively the professional knowledge of renewable energy industry practitioners, and to promote the advancement of the renewable energy industry. NABCEP is dedicated to the implementation of appropriate professional standards designed to protect consumers and the profession.

Career Outlook

Photovoltaic devices generate electricity directly from sunlight. PV or solar electric systems can power small devices such as road signs, can be placed on rooftops for homes, businesses or schools, can provide "building-integrated" devices in commercial buildings, and can be placed at other point-of-use locations. All sectors of the photovoltaic market continue to grow. Global PV market growth has averaged 25%+ annually over the last 10 years, with worldwide growth rates for the last 5 years well over 35%. Significant state incentives are growing the domestic market. Successful candidates achieving the PV Entry Level Certificate of Knowledge will have the basic knowledge of solar electricity suitable for a supervised, entry level position with a dealer and/or installer or other PV industry company.

Description of the PV Entry Level Certificate of Knowledge

This Certificate will be a way for a student to demonstrate basic knowledge, comprehension and application of key terms and concepts of photovoltaic (solar electric) system operations. Schools and Training Programs will offer a course during a semester or other defined time period and then administer a NABCEP-issued exam. A candidate for the Certificate will have to complete this course and pass the test. While the Certificate of Knowledge by itself will not qualify an individual to install photovoltaic (PV) systems, it does recognize understanding of the basic terms and operational aspects of a PV system.

Learning Objectives

The PV Entry Level Certificate of Knowledge program is based on a set of learning objectives developed by a NABCEP Committee of PV subject matter experts. The Learning Objectives include ten (10) skill sets:

- PV Markets and Applications
- Safety Basics
- Electricity Basics
- Solar Energy Fundamentals
- PV Module Fundamentals
- System Components
- PV System Sizing
- PV System Electrical Design
- PV System Mechanical Design
- Performance Analysis and Troubleshooting

See the “Learning Objectives” document for the full description of these skills and tasks.

The skills identified in this analysis do not replace electrical trades, technician, technologist or engineering training.

NABCEP will periodically review the learning objectives and make any changes according to changes in the National Electrical Code or any technology changes. NABCEP will notify the provider of any modifications to the learning objectives.

Criteria for Provider Participation

The PV Entry Level Certificate of Knowledge program can be offered by any accredited university, college, community college, or vocational-technical institute; or offered by any Joint Apprenticeship & Training Committee or U.S. Department of Labor approved apprenticeship program; or offered by a training program accredited by the Institute for Sustainable Power or similar accrediting body.

Educational providers must complete the NABCEP “Provider Application.” The application is good for three years at which time, the provider must reapply with NABCEP.

Course(s) are required to have an interactive teacher-learner structure. This implies a connection between a learner and a learning source. It can include classroom time led by an instructor and/or discussion leader. It can also include activities in which a learner is engaged in a planned learning event in which he/she is separated from faculty and other students but where the learner receives some sort of feedback and the learner’s progress is monitored. Examples include computer-assisted instruction, interactive video/CD/DVD and/or web site learning.

Providers are required to provide students with the necessary information covering the NABCEP-issued learning objectives. This material shall be presented in a well developed way. Courses can include more than the learning objectives but must include a comprehensive review of them.

All providers must provide special testing accommodations and comply with the provisions of the Americans with Disabilities Act and with Title VII of the Civil Rights Act and other applicable laws.

All providers must provide a copy of the appropriate Certificate of Insurance(s) showing that professional liability and general liability policies are maintained with respect to the administration of examinations.

NABCEP has the right to make changes to these Criteria for Provider Participation and will notify the provider of any modifications.

Student Eligibility Rules

There is a two-step process for a student to achieve the Certificate. A candidate first has to successfully complete a course (or courses) offered by an educational provider who is registered with NABCEP. The candidate then has to pass the NABCEP-issued exam.

Candidates will have to fulfill the course requirements and meet any prerequisites determined by the provider. Unless otherwise directed by NABCEP, registered providers will apply their standard policies and procedures related to the provider's courses and exam administrations.

Teachers and instructors are not permitted to sit for the Entry Level Exam or open the sealed, individual exam booklets.

The Exam

The NABCEP-issued exam will align with the learning objectives by using an exam blueprint form. The exam will be based on psychometric practices and prepared by subject matter experts. A professional testing service will prepare the exam packages and send them in a secured way to the course provider. Exams will be administered and proctored on site at a location determined and announced by the provider. Exams will be returned to the professional testing service for scoring. Successful candidates will receive the PV Entry Level Certificate of Knowledge from the NABCEP office.

Providers will be required to sign an Agreement Form for Providers with NABCEP, agreeing to comply with applicable NABCEP policies, including those related to maintaining the security of the examination, confidentiality of the test items and other related issues.

All requests for examinations must be received by NABCEP **three weeks** prior to the actual exam administration date. Exam requests will be submitted to NABCEP by Providers along with the Student Application forms and students' checks/money orders. Providers may choose to enclose one check from the institution, representing the sum total of all student checks.

Course tuition will be set and collected by the course(s) provider. The exam/Certificate fee is set by NABCEP and will be transmitted with the student sign-up form by the provider directly to NABCEP.

Upon grading of the exams, NABCEP will send candidate scores directly to each candidate to the mailing address provided in the student sign-up form. A candidate passing the exam will receive the official NABCEP PV Entry Level Certificate of Knowledge. Providers will be sent a listing of the scores of each candidate. This listing will also contain the median score of all candidates taking the exam nationally.

Exam Time/Length: Candidates will be given up to two (2) hours to sit for the examination. The exam will consist of sixty (60) multiple choice questions.

Items Provided at the Exam: The exam is **NOT** an open book exam. The only material to be provided to candidates will be any formulas necessary to answer questions. These formulas will be provided in the Exam Booklet by NABCEP. Candidates should bring their own calculators to the exam.

NABCEP Exam/Certificate Fees: \$70.00 per exam.

Passing Score: The passing score for the exam is determined by NABCEP in consultation with our testing contractor in accordance with appropriate psychometric guidelines.

Exam Refunds: Permitted up to the time NABCEP places orders for the exams with the testing service.

Rescoring and Comment Policy: It is NABCEP'S policy for this exam not to permit any rescoring of exams. This is because exams are computer-scanned by the exam contractor multiple times to ensure accurate scoring. If candidates have a particular issue with a question, they will be provided with a comment form to list and explain such issues in writing.

Retaking the Exam: Students may take the exam one additional time at a scheduled, organized testing site without repeating the course. Students will be required to pay another exam fee. The student will need to make arrangements with a provider offering the course and may be required to pay an additional administrative fee set by the provider.

Use of the Certificate

Candidates who satisfy all NABCEP eligibility requirements may represent that they have been granted the PV Entry Level Certificate of Knowledge issued by the North American Board of Certified Energy Practitioners (NABCEP). All references to the credential must indicate the date the Certificate was issued, and may only be displayed in association with the credential holder. The Certificate is personal to the credential holder and may not be transferred, assigned to, displayed or used by any other individual, organization, business, or entity. Replacement Certificates are available from NABCEP for a small fee.

If you have any questions about NABCEP, please contact

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