



SPVP Certification Scheme

A Certification for Energy generation/production system professionals.

CERTIFICATION SCHEME 1.0

Version No: 1.0
Effective Date: 6/14/2024



Scope

Professionals who have the Certified Solar PV Professional (SPVP) certification will demonstrate an important level of knowledge throughout the life cycle of a large photovoltaic installation and of the small photovoltaic installation for self-consumption. This covers the technical and financial characteristics of the main equipment of the photovoltaic installation through its design, construction, operation and maintenance and all aspects to take into account in terms of installation quality and financial stages. This course is designed for energy managers, sales, or financial and technical personnel of any company involved in the technical and financial aspects of PV systems.

Certified Solar PV Professionals demonstrate competency in the following areas that are included in the SPVP Body of Knowledge to gain certification: introduction; commercial & industrial (C&I) residential solar basics; utility scale basics; solar resource and yield; economic analysis; equipment description; electric design & works; structural design & mechanical works; civil design & works; plant operation and safety.



Eligibility Requirements for Competence

Individuals applying for the SPVP Certification Examination must attend an approved preparatory training course, meet the following education, and experience requirements, and complete a certification application.

Education and Experience Requirements

Education		Work Experience
4-year related* degree	and	2+ years related** experience
Professional Engineer (PE) OR Registered Architect (RA)	and	2+ years related** experience
2-year associate degree*	and	5+ years related** experience
NONE	and	10+ years related** experience
Current status of Certified Energy Manager® (CEM®), Certified Energy Auditor (CEA™), Certified Performance Contracting & Funding (PCF™), or Certified Renewable Energy Professional (REP™)	and	NONE

*Related degree includes engineering, architecture, science, business, or related

** Related experience includes experience in project development, implementation, or management in energy generation/production systems.

Examination Requirements for Competence

To earn the SPVP Certification, candidates must pass the certification examination. The competency requirements assessed are the following:

Certified Industrial Energy Professional - Examination Blueprint

Body of Knowledge / Duties and Tasks (% Exam)	
1	Introduction (5% - 7%)
101	General introduction of solar PV energy
102	Index solar irradiation
103	Global emissions
104	Energy diversification
105	Integration capacity
106	Fundamentals of the PV generation – the PV generator
107	Life cycle – components and what is needed
108	General description of installation – different plant configurations
2	Commercial & Industrial (C&I) Residential Solar Basics (7% - 11%)
201	Development of business plan
202	Life cycle
203	Self-consumer and energy balance
204	Off grid systems and energy balance
205	Support structures
206	Legal aspects and policies & regulations

Body of Knowledge / Duties and Tasks (% Exam)	
3	Utility Scale Basics (10% - 14%)
301	Development of business plan
302	Life cycle
303	Mounting
304	Systems tests
305	Quality assurance
306	Commissioning of PV systems
307	Operation and maintenance
308	Guarantee and performance contracts
309	Legal aspects and policies & regulations

4	Solar Resource and Yield (8% - 12%)
401	Calculation of solar resource
402	Atmosphere effects. Climate files: TMY and AMY
403	Tilt
404	Orientation
405	Shading effects
406	Yield
407	Simulation tools

5	Economic Analysis (14% - 20%)
501	Investment characteristics
502	Costs of components
503	Cash flows
504	Calculation of levelized cost of electricity
505	Taxes, depreciation
506	Financial tools
507	Financing accounts
508	PPA
509	EPC

Certified Industrial Energy Professional - Examination Blueprint

6	Equipment Description (6% - 10%)
601	History and technology
602	Photovoltaic module, current state of development of PV technology, and cell types
603	Support structures, requirements and considerations
604	Solar trackers
605	Electrical cables and connectors
606	Inverters
607	Controllers and optimizers
608	Charge regulator
609	Batteries
610	Alternative technologies to store energy

7	Electric Design & Works (10% - 16%)
701	The photovoltaic generator. IV curves
702	Inverters and charge regulators and optimizers
703	Cabling
704	Earth networks
705	Batteries configuration
706	Transformer
707	DC and AC protections
708	Network connection

8	Structural Design & Mechanical Works (7% - 11%)
801	Variable and permanent loads
802	Support straps and trusses
803	Joists to the floor
804	Foundation
805	Solar trackers – characteristics and types
806	PV Solar Concentrators – characteristics and types

9	Civil Design & Works (6% - 10%)
901	Land, Geographic Information Software
902	Access and interior roads
903	Medium voltage infrastructure
904	Service trenches

10	Plant Operation and Safety (6% - 10%)
1001	Control system – SCADA and other technologies
1002	Operation and maintenance
1003	Measurement & Verification (M&V)
1004	Safety
1005	Security

Examination Specifications

The examination will be 4-hours, open book / open notes and follow the specifications outlined in the examination blueprint and will include all multiple-choice graded questions in accordance with the percent range for each task.

Code of Ethics

Codes of Practice are found in the Code of Ethics for Certified Professionals V1.1 dated November 21, 2019, available at www.aeecenter.org/CodeOfEthics.



Recertification Requirements

A SPVP must accumulate ten professional credits every three years and submit a completed Renewal Form to AEE to remain certified. Professional credits for recertification can be accumulated at any time within the three-year period. Detailed explanation of activities applicable as credits for certification renewal available at www.aeecenter.org/certification/renewal.

Activities for SPVP Renewal Credits

Continued employment in energy auditing activities:

- **1 credit per year**

Membership in a professional engineering society

- **1 credit per year**

Offices held in a professional engineering society

- **1 credit per year**

Continuing education (CEU's) / professional activities (seminars or conferences) including but not limited to energy efficiency, energy management, operations or maintenance of a building or facility

- **2 credits per CEU, college credit hour or 10 contract hours for training**

Awards presented and/or papers published involving energy, operations, or maintenance:

- **1 credit per: one energy-related presentation**
- **2 credits per: one energy-related paper**
- **2 credits per: one energy-related individual award**

Certified Professionals who do not acquire sufficient SPVP maintenance points to be recertified on the recertification date will no longer have an active certification and be notified in writing of suspension from using the SPVP designation. They will also no longer be listed as an SPVP in any AEE publication. A lapsed SPVP must resubmit to the certification process and successfully meet the criteria for certification by personal data information and examination. Another option for certified professionals is to acquire make-up points at a cumulative total equal to 3.5 per year for every year since date of expiration. This option is available one-time only. Certifications that have lapsed more than three renewal cycles must retake the SPVP exam.

An SPVP, upon retiring and/or reaching the age of sixty-five, can be designated as "SPVP – Retired," will no longer be required to pay renewal fees, and will no longer be listed in our directory of actively practicing SPVPs. No further reporting is necessary except to notify AEE of meeting the age requirement by sending a copy of the retired SPVP's Driver's License.

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