

SPVP BODY OF KNOWLEDGE AND STUDY GUIDE

Preparation for the SPVP Certification Exam



The SPVP Certification Exam is a four-hour open book exam. The examination questions are based on the Body of Knowledge listed below. Because of the diversity and background and experience of Solar PV Professionals, the examination has 10 different subject sections, all of which are included in the exam. You must bring a hand-held calculator to the exam as the SPVP exam does not allow computers, tablets, or cell phones to be used during the test.

It is highly recommended that you review the complete Study Guide.

The SPVP Examination contains the following mandatory subjects:

Body of Knowledge 2.0	Percent of Exam
1. Introduction	5 – 7%
2. Commercial & Industrial (C&I) Residential Solar Basics	7 – 11%
3. Utility Scale Basics	10 – 14%
4. Solar Resource and Yield	8 – 12%
5. Economic Analysis	14 – 20%
6. Equipment Description	6 – 10%
7. Electric Design & Works	10 – 16%
8. Structural Design & Mechanical Works	7 – 11%
9. Civil Design & Works	6 – 10%
10. Plant Operation and Safety	6 – 10%

CERTIFIED SOLAR PV PROFESSIONAL (SPVP) EXAM

The following is a list of the subjects for the SPVP exam.

The primary references include:

Certified Solar PV Professional (SPVP) Training Workbook (available to AEE training attendees)

The study guide is intended to help prepare candidates taking the Certified Solar PV Professional (SPVP) exam.

The exam will: be open book, last four hours, and contain all multiple-choice questions to answer. There are 10 sections listed below from which questions mainly are drawn.

BODY OF KNOWLEDGE: STUDY GUIDE TOPICS & REFERENCES

1	Introduction
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
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

3	Utility Scale Basics
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

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| 308 | Guarantee and performance contracts |
| 309 | Legal aspects and policies & regulations |

4	Solar Resource and Yield
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| 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
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| 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 |

6	Equipment Description
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| 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 regulators |
| 609 | Batteries |
| | Alternative technologies to store energy |

7	Electric Design & Works
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| 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

- 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

- 901 Land, Geographic Information Software
- 902 Access and interior roads
- 903 Medium voltage infrastructure
- 904 Service trenches

10 Plant Operation and Safety

- 1001 Control Systems – SCADA and other technologies
- 1002 Operation and Maintenance
- 1003 Measurement & Verification (M&V)
- 1004 Safety
- 1005 Security